350

```
TGTCTAGGAT CAAATGACTC ATTAGCCCAC ATGACAGTAA TTAGATTTTC TGTATCAGAA          3960

AGATTAATAA TATTATGTGC ATAGCCCGGT ATCATATGTA TTGCTTCAAT CTTATCGCCC          4020

GACACTTCAA AGTTCAGAAT AGGATACTCT TGACCGTTTT CATCCAGCCC TATCCTACGC          4080

TCTTGTATTA AAGCACGACC AGAAACAACC ATGAAAAATT CCCACTTAGA ATGATGCCAA          4140

TGTTGCCCTT TGGTAATGCC AGGTTTAGAA ATATTAACAG AAAATTGACC CGTATTTTCT          4200

GTTTTTAATA ATTCCGTAAA ACTACCTCGT TCATCTATAT TCATTTTTAG AGGAAACTTA          4260

AACTTATCTA CTGGTAAATA AGATAGGTAG GTAGAATACA ATTTCTTTTT AAACGATCCC          4320

TGAGGAATTT CAGGCATAAC TAAACTATCA GGCTGTTTTT TAAATGTTTC TAATAGAGAG          4380

ACAATCTCTC CTAAGGTTGC ACGATGAGTC GTTGGTACGT AGCAGTAGTT TCCTGATGGG          4440

CTAGGTAAGA TTTGTAATCC ATCTAGATTA CAACGATGAG GATTTCCTTC CAATGCAGTT          4500

AGACACTCTT GTATCAAATC ATCAATATAC AGCAACTCCA ATTCTACACT TGGATCATTT          4560

ACTTGAATAG GTAAATCGTG AGCTAGATTA TAACAGAAAG TTGCTACAGC AGAATTGTAG          4620

TTAGGACGGC ACCACTTCCC ATAAAGATTC GGGAAACGGT AAACTAAGAC AGGTGCTCCC          4680

GTTTTCTTTC CATATTCAAA GAAGAGTTCT TCCCCTGCTA GCTTAGATTG TCCATATATA          4740

GAGTTTGAAA ATCGGCCTTC TAAACTAGCT TGAGTAGAAC TTGAGAGTAG AACAGGACAA          4800

GTGTTTTCAT ACTTTTCTAA AATCTCCAAT AATCTACTTG AAAAACCGTA ATTTCCCTCC          4860

ATGAATTCAT CAGGATTCTG TGGACGATTG ACACCAGCTA AATGGAATAC GAAATCGGCC          4920

TTCTTACAAT ATTCATCTAA TAAAATCGGA TCTGTATCAC GATCATACTG AAAAATCTCT          4980

CCAATCTCTA AATTAGGACG AGTCCTATCT CGTCCATCTT TCAAAGCTTC CAGAGTACAG          5040

ATAAGATTTT TTCCTACAAA TCCTTTCGCT CCTGTGATTA AAATATTTTT AATCATGCCC          5100

CCTCCTTATT TTATATGCTG TTTTAATAGT TAACTCTCTC GACAATACAT GATACATTAT          5160

ATATCCTTGA TAATTTTAAT GTATCTTAAA AGATTTTACA TCTCTTCGTC TGCTACCATA          5220

TCACGAATTG CTGTCTGTAT TTCATCTAAT TCTAGCAACT TTCTTTTAAC TTGCTCTACA          5280

TCCATCAAAT CGGTATTATT ACTATTGAAT TCTGTCAACA AATTTCTATT CGTACTACCA          5340

TCTTTGAAAT ACTTATCATA GTTAAGATTA CGATTATCAC TAGGAACTCT ATAAAAATCA          5400

CCCAAATCAA TTGCATTTGC GCACTCTTCG TTAGTTAATA GTGTTTCATA CCTTTTTTCT          5460

CCGTGTCTAA TACCTATAAT CTTAATATCT TGTTCTGAGG CAAAAATTTC TGATACAGCC          5520

TTAGCCAACA CTTCAATCGT ACATGCTGGT GCTTTCTGAA CTAGTATATC TCCAGATTTC          5580

CCTTCTTCAA ATGCAAATAA AACCAAGTCT ACTGCTTCTT CCAATGTCAT CACAAAACGT          5640

GTCATGCTAG GTTCAGTAAT TGTAAGAGCA TTTCCTTGCT TAATTTGCTC AATCCAAAGA          5700
```

351

```
GGAACGACAG ATCCACGGCT ACACAGAACA TTCCCATAGC GAGTCACACA TATCTTTGTA      5760

TGCTCAGGAT TTACCGTCCT GGACTTAGCA ACAGCAATCT TTTCCATCAT AGCCTTGGAT      5820

GTTCCCATAG CATTGACAGG ATAAGCCGCC TTATCTGTAG AAAGACAGAT AACTTGCTTT      5880

ACACCAGCTT CGATAGCCGC AGTGAGGACA TTCTCCGTTC CCAAAATGTT AGTTTTTACC      5940

GCTTCTACAG GGAAAAATTC ACAAGAAGGT ACTTGTTTAA GAGCAGCAGC GTGAAAAACA      6000

TAATCCACAC CATGCATAGC ATTTTTTACC GAAGCTAAGT CACGCACATC TCCAAGGTAA      6060

AAACGGATTT TCCCAGCCAC TTCTGGTACT TTTACCTGAA ACTCATGACG CATATCATCT      6120

TGTTTCTTTT CATCTCGCGA AAATATACGA ATCTCTGAGA CATCTGTTTC TAAAAAACGC      6180

TTGAGAACCG CATTCCCAAA TGAACCTGTC CCTCCTGTAA TTAGGAGAGT TTTTCCTGTA      6240

AATTGTGACA TATATTACAC TTCTCCTTCT AGTATGTCTG CAATTTTCTT ACAAGCCGTT      6300

CCATCTCCAT ATGGATTTGA AGCTTGACTC ATTGCTTGAT AAACTGAATC ATTTTCTAAT      6360

AATTCTTTAA AATGCCTATA AATATTATTT TCATCAGCAC CTACAAGTTT CAAAGTCCCT      6420

GCTTCAATTC CCTCTGGACG TTCAGTTGTA TCTCTCATAA CCAAAACAGG TTTTCCTAAA      6480

CTTGGAGCCT CTTCCTGAAT ACCACCACTA TCTGTTAAAA TTAAATAACT TCTTGATAAA      6540

AAATTGTGAA AATCTAATAC TTCTAAAGGT TCGATCATCT TGATACGTTC ACAGCCACTT      6600

AGTTCTTCCT CAGCAATTTG GCGAACACGA GGATTCATAT GGATAGGATA AATAGCCTTG      6660

ACATCTGAAT ATTCTTCAAT AATCCTTCTA ATTGCTCTAA ACATATGTCT CATCGGTTCA      6720

CCAAGATTTT CACGACGATG AGCTGTAATT AGAATAAACC TGCTTTCTCC TATCCATTCT      6780

AACTCAGGAT GCGTATAGTC CTCTTGAATT GTAGTTTGTA AAGCATCAAT CGCCGTATTA      6840

CCTGTCACAA ATATGCTCTC TGGAGTTTTT CCTTCTCTTA AAAGATTATC TTTTGAAAGT      6900

TGTGTTGGTG TAAAATGATA CTGAGCCAAA ACCCCAACTG CTTGACGATT AAACTCTTCA      6960

GGATATGGTG AATAGATATC GTAAGTGCGC AAACCAGCTT CAACATGACC AATTGGAATC      7020

TGTAAATAAA AGGCCGCCAG TGAACTAGCG AAGGTCGTAC TTGTATCCCC ATGAACTAAC      7080

ACCAAATCAG GTTTTTCTGA CTCTAAAATA GCCTTCATTC CTTCCAAAAT GCCAATGGTC      7140

ACATCAAATA AAGTTTGTTT ATCTTTCATA ATAGACAAAT CAAAATCGGG AATAATCCCA      7200

AATGTGTCCA AGACCTGATC CAACATTTGA CGGTGTTGGC CCGTAACGCA AACTAATGTT      7260

TCAATATTCT TACGTGTTCT TAACTCTTTG ACCAAAGGAC ACATCTTGAT GGCTTCTGGA      7320

CGAGTTCCAA ATACTACAAC TACTTTTTTC ATATATTTAC TTACTCCTAA CAAATAATGA      7380

ACGGTTCTTA AAATAAATTA GATAACGGCT AATCCATAAC ACCACCTCAG ACATACTTGA      7440
```

352

```
ACAAATAGCT AATGTTACTA AACTAAAATT ATCAGACAAG ATAAATATTC CTAATCCCAA      7500

AGTTTGGACA ATCGAAGCTA ATATAGTTGT CATTGTAGTT TCTTTCACTT TATCAATAGC      7560

TCCTAAGACA GGCCATCCGT AAATCATAGA ATAAAAACTA GCAACAAAAG CGGGTAATAA      7620

GTACTTAAGA AAATCTGCTG AAACGGTATA TTTTTCACCA CCAATTATAG AAAGAATTTG      7680

ATTTGAAAAG AATAAAACTA TCAAAACTCC AAAGATAATA GGAATAAACA TAATCCGATT      7740

AATACTCTTA ACCGATTGTA TATCTTTAGT ACGTATCATA TGCGGATATA AACTATTCGC      7800

TATAGGATTA TACAATGATT TTGCTGCTGA AAGCAGTTGC ATTGCTATCC CCCAAAAGGC      7860

TATCTCTTGA CTTTGTAAAT AAAAACCCGA AATGACTGTC GTAAAGACGC CAAAAATAGT      7920

AGTTGCAAAA TTGGATAAAA AATAAATAGA GGATTCCTTT AAATCTTTAA CCCAAACAGA      7980

CAGATAAGAA AATGATAATT TAATTCCATA ATAATGAAGG AATCTATAAG AAACTACTGC      8040

AGCAACTAAA TTCCCAATTC CTTCCAATAT AGGAATCCAT AAAATAGAAG AATCATCTTT      8100

TACTACAATA AATGTCAAAA TTGTAATGAT AGTTTTAGAA ATAATATAAG GAATTGCAAC      8160

TGCATGCATC TTTTCAATTC CACGAAATAA AAAGTCAAAG ATAAAAATAT TGGTCACTGT      8220

AGCTAACAAA TAAAAAACTG AAAAAAGAAT ATTCTCTCTC ATTATTGGGA TTTGCCACAT      8280

CAATATGGTG TAAATTAGAA TCGAAATGAT AGATAAAAAT ATTTTTTCAA CTAGAGTATC      8340

TCCAACTATC CTTCCAATCT TTGAGGGAGT AGTACAAGCA TTTACAATAT TTTTTGTAGC      8400

TGATATCATG AAACCAAAAT CAATCACCAG TTGAACATAA GCTATTAACG CTTTAACATA      8460

AATAACCATT CCATACGCGT CTAGCGAAAG CACCCTTGTC AAATACGGGA GTGTTAATAA      8520

AGGAAATAGT AATTTAACAA TATTCAGAAT ATAGAGAGAA CTTGTATTTT TTATAAATGA      8580

AATTCTATCA ACTTTCACGA ACTAGTCCTT CCAAAAAAAG ATCTAAATAG TCCAAACTAC      8640

TTCTCGCTTT CAACACCAAT TCTGAAGGTA TTGTTATCGG TTTTAGATGA AAAGTTTCAA      8700

GTTTCTTTAC AATACTATTA ACACTTGAAT CAAATAAAGA TTCACAACGT TGTAACTCTC      8760

CAATTGCTCC ATAATAACGT GCTGTTTTTT CTGGATGGCA TGCAATGGCA ATCACAGATT      8820

TATTAAAACA TGTTGCCACT ACCCCAACAT GTAATTTACA AGTTAAAACC ACATCTACCA      8880

TTTTCAACAA TGATGTCATT TCTGCAGGAG AATGATACTT GAATTGAAAA CAATCCTCAG      8940

TTCTAACTAA TTTTCTAAAT TCCTGATAAT AAGCATCTTC ATAAGGTAGA ATGGAATCCG      9000

AAGTTACTAC AACATAATAG TTAGGATTGT TTTCTAGAAA AAGACTAATT GATTCCGCAA      9060

ATTTTTCAAG AGCTTTTTTG GAATGATTAT AGTGAACAAG AATTATCTTC TTATCTTTAG      9120

CTTCTCTTTT CAATTGACAC AGCTGCTCTG TTTTTTCTTC TCTTAATTTA CTTGAAATAA      9180

TTAAATCAAA GGTTTCATGC ACTGGAGCCG AAGGCGACAA ATGCTTCAAA GAATCAAATG      9240
```

353

```
ATTCTCGATC ACGAACTGTA ATAAATTGAG CATGATTAAT AATTCTCTTT ATACCATAAT        9300

TCATCAAAGA ATCGTTATTA GGCCCTGCAC CAATACCTAA TACTCCTATA GGCTTTTTAA        9360

AATATGAAGC CCAAATTCCC AAAGGTAAAA ATCGTTTAAA TTGGATTAAA TTATCACGAA        9420

AACGTGCATT ATGCCCTTCC CCAAAATATC CTCCCGGGAT ATACAAAATA GCATCTGCTT        9480

GTTTTTTAGT AAAACTTTGT TTTTGGCGAT ATTCTTTCAA GTACATTTGA AAGAAATCTG        9540

ATGGATTATA AAAAGAAACT TCATATCCTT TAGATTCTAA TAAATCATAG ACAATCTCAC        9600

CGTAAAGATA ATCACCGTAA TTACTTGAAC CATAATCCGT TGCACCATGT AACATAATTT        9660

TTTTCACCAC TATTTTTTCA ACCTCCTAAA AATAAATATC ATAATCAAAC TATACATAAT        9720

AGGACGATAA ACATCTATTG AACTACTTCT CACTAAAAGC AATAGTTGAG AAATTACCGA        9780

AAAATAAATA ACTTTTGAGA TTTTACTTGT TTGAAAGCT CTGAAATTTA ATCGCCATCC         9840

ACTAAATATT CCCAAAACAA AACTCCAAAA AACACCACCA TAGTAACCAA AGTTCCAAAA        9900

TAATTCTTCC ACAAAAGAAG AGCCTACAGG TAACCCCAAA AATTTATTAA TAACAACCGT        9960

CGCTGATGCT TTATCAAAAA AATCACCAAC TAACCATCCA ATAGGAAAAA TTGATAGGAT       10020

AGTGCGTAGA AATGTCATCC CATATTCATA TGGAATGCTA CTAGGCACAA CAGTTACAGC       10080

AGAAGCTACT GTTAGGCTGG TCAGTCCCGA CTCTGAAAAT ACTTCCCCTA GTATATTCTT       10140

TACAAAATCT AATGAAGAAA AGGAATCAAA TAAGTATATA CCTATAGTAT TCAAGTCGAA       10200

ACGGTGCCCC CTAATAACAA CTAATACATT TAATAGAAAT ACAGTTACTA TTAAAAATAC       10260

AAGTACTCTT TTCTTCGAAA AAGTAATCCC TAAAGATTGT GTGTATACTA AAACCAACGC       10320

CAAGATTGAA AACACCTGGA TTTTACGACT TCCTGTTAGG ATCATTATCA AAATTAGGTA       10380

AAACAACATT ACCCAAAAAA TAGTACGCTT TATAACTCGG GACAGCTTAT CTGAATAAAA       10440

CAAGGAGAAC ACACCAGGAA GCATAAGTAC TCCTAAATCA TCTATTATTC CTGAACTAGC       10500

TGCCTCTGAA TATGCTGAAT AGCTATTCGC CGCTCTAACT GCTAGTACTG TTTTAGAATC       10560

AGTTATTACC CTAGAAATAA AGCCCACTCC TGTTAAAATC CTACCCGCAT TGTACAAAAT       10620

TTTCTCTTCA TTTTCCTGAT AATTTTGTAC TTCTGAATGA TAATGTACCT TTCCATCACT       10680

ATAAAAAAAT AAATAGCCTA CAGAATAACA AAACAAAATC CAAATTATAA AAATATATGA       10740

ATGAAATAAT TCTTCATTAT TATAGAAGTT ACTAGGGCTC CACAGCAGAG TTGTTTGAAA       10800

CCCCATATAC TCATTGAAAA TTAATCCAAA CATAAAAAAA TAAGATAAAA TCAGATACCA       10860

TACAGAAAAA TCATATATAC TAACTTTTTG TAAAATAAAA CCAGTAATTT GAAAAATAAT       10920

TAGAAAGCAA ACCCATATAA ATATAGACGG AACATAATTA GATATAAGAA AACCATTATT       10980
```

354

```
CCAATTATCG AGAGTCCAGA ACAAGTAACA GAAAGCAAAT ATAAAACTTA ATGTCACTAG      11040

TGTCACTCTA CAAATATACT TTGTCTGCAT CTATATCTCC TTTATTACAC ACATTTCTTG      11100

ATAACGATTC AATAATTTAC TAGCTTGATA ACAAATATCA TAGAGTCCAT CTGTCATACT      11160

GTTATTTATT TCAAAACGAT TGCATTCCTC AGATGTTAAA GACAGTACTT TATCTTTCCA      11220

TAGCAACACA GACTCTTCGT TGATAGGTAA GTAACTAATG TTTTTGGTCA CATCTACTTC      11280

TTGCGTCACT GTATCTGACG ATAAAATTTG TAATCCCGAT GCCTGAGCCT CTACTAGAGA      11340

AACAGGCAAC CCCTCATATT TAGACGGAAG CAAAAAAACA TCCATCGCAG ATAATAAATC      11400

AGAAATATCA GTCCTTCTCC CTAAAAATAG CACATATGGG GTCAGATTTA GTTCTAAAGC      11460

TTTCTGTTTT AATTTCTGCT CATCCTCACC ATTACCAACT AGGAGTAAAA TAACATTTGG      11520

TTTGATTAAA ATGAGTTCTT TTAAAACGTT AAATAAATAA CTTTGGTTTT TTTGATCTGA      11580

TAGGCGAGCT ATATTTCCTA ATACGAACTT ATTTGACACA TCTAATTCTC TACGACATTT      11640

TTCTCTAACA TCTGACAAAA ATTGATACTT TTTCAAATCA ATTGCATTAA AAATAATTTC      11700

AATTTTTCCG TCTTTATACG CTTTCTCTCC ATATAACCAC TTAGCCGAAT CTTCCCCACA      11760

TGCAAACCAA TGAGTTGCTA AGATTTTTAC CAAAATTGTT ACTAATTTAC GCAATACTTT      11820

TTGAAAACTG TTTTCTGTTA CATAAGCCAT ATGACTATGA ATAATTCTAA TTTTACAACC      11880

AATTATTTTA GATAAGATCA GACCAATTGC AGATTTATAG CCATGGCAAT GAACTATATC      11940

ATAATCTCCT TTCTTTATTA TTCTAGCAAG AGAGAGAAAC TGATGTAGAG GCTTTTTCCT      12000

TAATAGAGGC ACATGATAAA CCTTTGCACC CAATTCTTTC ATTTTATCCT CTAAAAATCC      12060

TTGTTCTTTT CCAGGCACAA TAAAATCAAA TTGAATTTTT TTTCTATCAA TGTGAGAATA      12120

ATAGTTGAAT AGAAAACTTT CTACTCCACC ACTATCTAGT GTTGTAAATA GATGTAATAC      12180

TTTAATCATT CTTCTTCCTT AAGCTTAAGA TTCGCTTCTC TAATTCTATT TCTGTTTTTT      12240

GTTTTTCTAA ACTAATTCTG TCCATGAAGT TATCACAATT CTTAATTAGC TGTTTCCTGT      12300

CAAGGTTTTG AATATACAAA GCCAAACAAT CTTTTTCCGA TTCATCCTTC ATAGGTAAAA      12360

CGAAACCAAA ACCATTCTCT ATTGACACTT TTTCCATATA AGTATCTTCA CAAACTAAAA      12420

TAGGTTTATA CAACAATGCA GCAAAGTAGA GTTTATTAGA CAAAGCATAG TCTAGTAAGG      12480

GAGTGTGATT CCCGTATAAA TTCAAAACAA CATCTGTATT CTTATAAAAA GACATGGTAT      12540

CTTTAGGCTG GAATGTGTCC ACCAAGTTAA CATTGCTGAT ATTTTTTTCT TGACAAAATT      12600

CCCTTAATTC TCCTGCATTA GTACCTATAA AATTCAACTG AAATCGACTG TCATTTGCAA      12660

AAAAATCGAT TATTTTTTTA TTTTGTTCTT GAAAACGAAT TAAACCAATG TAGGAAAGTT      12720

GAATTGGAAA CGTACTATTA TTTTTTAACT GCTTTACCTC GTTTAATTCT ATCATATTGG      12780
```

355

```
GTAGGTTATG GGTAGTAAAA TACTCTCCCA TTGGTAAAAA AAATTTATAG CCGTCTGAAG   12840

AAACGATATT CATTAAAGAA TTTTTCACCA ATTGTTTCTG AACCAAACGA TAAACCAAAA   12900

ATTTTTCATA ACTGTAATCA CGAATATCAT AAATATATCT ATTTTTAAAT GAAAAGAGAA   12960

GAAAATCTAC TAAAATGAAA GACACAATAC TATGTAACGG CAATATCATA TCATAATCAT   13020

TTTCTTTTAG CTTCTTTTTA ATTTCTTTTC TGAATTTTAC ATAACCTAAT ATCTTACTTA   13080

ATTTTCCTTT ACCAGAAAAA GAAATACGAT AGTAGTTTTG TTTTGTAATA ATCTCGTTAA   13140

TATTCTTATC CCAATATATA ACATCGTAAC TAATAGACAG TTTCTTCAAT AATTCTTTAT   13200

AAAAATTGAA GTAAGGAGTT AGATATATAT TATCAGATAG TATAAACAGT ACTCTCATTA   13260

AATTATTCTT TCTTACTTTC CCTCTCTAAA CATGTCTCCA GTTCGAGCAT AAACTGCTCT   13320

TTTGAAAAGT GATTTTCATA GTAACAACGA GCTTTCTTTC CTAACTCTCT TTGTCTCTTA   13380

ATAGATAACA TACTAAATTT ACAAATATTT TTTGCCAATT GTTTTACATC TCGTTCGGGA   13440

CTAACATATC CACAATTTGC TTCTTCTACA ATTATTTTAG CATCTCCTGA AATTGCACCT   13500

ATAATTGGTT TGCCTGCCGC CATATAAGAk TGTACCTTCC CAGGTATAGT ACGAGAAACT   13560

ATCGAGTCTC CTATTAAAGA AACTAACATA GCATCTGATT TTTTATAGAA GGATGGCATT   13620

TCCTCCAAAG AACGTCTTCC ATAGAAGGAA ATATTCTTTA ACTCCAATTC ATGAGCTAAT   13680

GCTTTCATGC TTAACAATTC CGTACCATCT CCAACAAAAT GAAAATGAAT TTTCTTGGGT   13740

AAATTGGTAT TCTTCTCTAT CAAACTGGCA GCTTTCAAAA TAGTTTCCAA ATTTTGTGCT   13800

TTGCCAATAT TACCAGCAAA AGTTAGGTCA ACACTTTCTT TATTAACTAT AGATTCATCA   13860

GGGATAAAAA GATCTTCTGC ATATTGTGGC AAATATGTAA TCTTTTGTTC GGATATGTCA   13920

AATTGCTTCA CAAAATAATT TTTAAATGAT GGACTAGTGA CAAATATATA ATCACTAGCT   13980

CGGTAAACTT TTTTTGAGAT AAATTTAAAC AGCTTGAAAA TCAAGCCATC TTGTTTCACT   14040

CCACCTACGG TTAAACTATC TGGCCAAACA TCCATACAAT ATAGAAACAT CGGTTTCTTA   14100

TATTTTTTTT TATAAGCCAT ACCAGCCCAT GCCATCATAA CTGGAGACAA TTGGTTAACG   14160

AATACACAGT CAAAATTCGA TCCATCTTTC GTTTTATACC TCCCCAATAA AACTCCTAAA   14220

GTAGAACTAA TTGCAAAGCT AAAATAATTC AACAATCGAA ATACAACACT TTTTTTTCTA   14280

GGGATTGTAT AAGAACGATA TATCGTAACA CCTTCTATAA TCTCACGTCT TTTTTTATTA   14340

TGACGATAAT CTGCATATAT CTTCCCTTCA GGGTAATTAG GAATCCCAGC CAAAACAGAG   14400

ACTTCATGCC CTTTTCGAAC TAAATCTTCA CAAATATCTG ACAACCTGAA TGGTTCTGGC   14460

TTATAATGTT GGCAAACAAA TAGTATTTTC ATTGTCCAAT TTAACTTTCT TTCTTACCAC   14520
```

356

```
TACCCTCTAC AATACCTTTT CGTTTCAGTA CGTAAGGTAT TGTCTTAACT ATACATCTAA    14580

TATCCATTAT CAAAGACAGA TGTTTAACAT AGTAGCCATC TAACTCCGTC TTCATCTCAA    14640

CAGACAAAGT ATCACGCCCG TTAATTTGTG CCCATCCAGT TAACCCTGGC AAGATATCAT    14700

TTGCTCCATA CTTATCTCTC TCTGCAATCA AATCTAGTTC ATTTATACCC GCTGGTCTAG    14760

GACCTACAAT ACTCATATTA CCAACAAGAA TATTAAACAA TTGTGGTAGT TCATCCAAAG    14820

ATGTTTTTCG CAAGAAAGCC CCTACTTTTG TAATCyATTG CTCTGGATTA TATAAGTTTC    14880

GAGGCGCCAC ATTTTTAGGT GCATCTATTT TCATAGACCT AAATTTCAAA ATATAGAAGT    14940

ATTCTTTATG AATACCAAAG CGTTTTTGCT TAAATATAAC CGGACCTTCT GAATCAAGTT    15000

TAATCGCAAT TGCAATTATC ATAAAAACCG GACACAATAT TATTATCCCT ATTAAAGATA    15060

ATAATATATC ACCTAATCGT TTTATTATAC CGTACATAAA CAACCTCCAA CTATAAATTC    15120

TATTTCCATT TTTCATTCTA TTTCCATTTG ACAAATTAAA TCAGGCAGTA CATGCAACTA    15180

CAGAAACTCA ATATATATTT GGTCACTCAA TGATTTTCAG AAATATAATT CTTTTATCCT    15240

CTACGTCAGA TAAAACTTTT CTCCATCTAA ACAAAATTTA TTTGTTTCAG TAATATATGA    15300

GTTCTCAATA ATGAATTAGA AGGTCCAGTT CAATTATTCT TCCAAATAGA CCGAATATTA    15360

TTTGAAGACA TATCGGTTTC TGAAATTGCA ATCAGTACAT AAGCTAATAA ACTGATAAGT    15420

ATGCTCTGTA AGAATGCCAG AGTTATATTG TAGTCCCCTT CCATACTATA TTCATTTTAT    15480

TTTTTACCAT AATTTCCATA GGAACCGTAA ACTCCATACT TATTAACCGA GATATCCAAT    15540

TTATTTAAAA CAACTCCTAG GAACAGTTTC CCTGTTTGTT TTAATTGTTG TTTCGCTTTT    15600

TGGATATCAC GTTTATTCGC CTCACCTGTT GCTGTTACCA AGATGGACGC ATCACACTTT    15660

TGAGTGATAA TTGCCGCATC AATAACAATT CCAATAGGCG GTGTATCAAT AATGATATAA    15720

TCAAAATATT TACGCAATGT TTCAATCATA TCATTAAAAT TTTTACTTTG TAACAAGGCT    15780

GTAGGGTTTG GTGATACAGA TCCCGATTGA ACTACAAATA AATTTTCAAT ATTTGTATCA    15840

CATAAACCGT GAGATAAATC AGCTGTCCCA GATAAAAATT CTGTTAGCCC TGTAATTTTT    15900

TCACGAGATT TAAAAACTCC TAACATAACT GAATTTCGAG TATCGCCATC GATCAAAAGA    15960

GTTTTATAGC CTGCACGCGC AAACGACCAT GCTATATTTA TGGAAGTAGT TGTTTTTCCT    16020

TCCCCAGGGT TAACAGAAGT AACGGAAATT ACTTTTAGTT TATCTCCGCT CAACTGTATA    16080

TTTGTACACA AGGCATTGTA ATATTCTTCT GCCTTCTTAA TGAACTCCAG TTTTTTTTGT    16140

GCTATTTCTA ATGTCGGCAT CCTTCTCTCC TATTTCAACT TACCCAAGTT TGGCACAACT    16200

CCCAAAAGTG TCATCTGCAA TGTATTTTCG ATATCTTCCG GACGTTTCAC ACGAGTATCC    16260

AAAAGTTCAA GATGAAGAAC TATAACACTA GTTCCAATCA CCCCTGCCAA AAAACCAATT    16320
```

357

```
AGTGTATTGC GTTTAATATT TGGCGAAGAC GGGGATATCG CCGGCCTTGC CTCCTCCAGT     16380

GTTGTCACGT CAGAAACACG AGTAATACTG ATAATTTTTT GAGCAGCTAC TTCTCTCAAA     16440

GAGTTAGCGA TACGGCTTGC CTCTTCAGGA ACTCGATCAT TAACTGAAAT AGAGACAATA     16500

CGGGTATCAA CTGGTACTGT CACTTTAATT TTATTAGCCA AACCTTTTGG CGTCAAATCT     16560

AGTTTCAAAT CAGAAACAAC TTCCTCCAAA ACATCCTGCG AAAGGATAAT CTCACGGTAG     16620

TCTTTTACCA GATAAGTTCC TGCCTGCAAA TCCTGATTTG TCAACCCCGG CTTGTCTCCT     16680

TGATTGCGAT TCACTACGTA AATTCGCGTG GTACTCGTAT ATTCTGGCTT AACAATAAAA     16740

GTGCTATATG CAAAAGCCCC CGCACCTGTC ACAAGTGCCA CTATTAAAAT CATTAGCTTG     16800

CGTTCCACA AGCTTTTAAC TAATTGAAAT ACATCGATTT CTATCGTATT TTGTTCTTTC      16860

ATCATTTCTC CTAAATTAGT TGATCCATTA CAATTTTTCG AGGATTGTCT ATAAAAAGTT     16920

CCTGAGCCTT CGCTTCTCCG TATTTTTGGG TAACAAGGTC ATATGCTTCT GCCATATGAG     16980

GAGGTCTACC GTCTAGATTG TGCATATCAC TTGCAATGAC ATGAACCAAA TCCTGCTCTA     17040

AAAAATACTG AGCTCTTTTT TTCATGAATT TATAACGTTC GCCAAAAAGT TTGGGTTTGA     17100

GGACATGTGA ACTATTTACT TGCGTGTAAC AGCCCATATC GATCAGTTCT CGAACGCGTT     17160

TTTCATTATT TTCAAGAGCA TCATAGCGCT CAATGTGGGC AATGACTGGA GTAATTCCCA     17220

ACATCAAGAT CTTGCTCAAG GCGCTATGAA TATCGCGATA AGGAGTGTTC ATACTAAACT     17280

CTATCAAGGC ATAACGACTA TCATTGAGGG TCGGAATCCG CTTTTTTTCC AGCTTATCCA     17340

GAACATCTGG TGTGTAATAA ATTTCAGCCC CGTAAGCAAT GACCAAGTCA CTCGCCACTT     17400

CCTTAGCTAT TTCCCGAACC TGAAGAAAGT TTTCTGCTAT CTTCTCTTCC GGAGTTTCAA     17460

ACATGCCCTT GCGACGGTGA GAGGTAGAAA CAATGGTTCG CACCCCCTGT CTGTAGGATT     17520

CTGCCAAGAG AGCCTTGCTT TCCTCTCTTG ACTTGGGACC GTCATCTACA TCAAAAACGA     17580

TATGCGAATG GATGTCTATC ATTTCATCTA CCCTCCATCA CATCCTGTAT AGCTGCTTTA     17640

ACTACAGCTA AACTACTATC ATCTATTTCC ATCACATAGA GGTTACTGTC TGGCATTGCA     17700

TAAGAAGGAA GATCCATCCG ACCTGTCCCT TTTAAATCTT GAGAATTTAC TTTATAATTC     17760

CCTCCACTTT CTAACTGAGC ATTGACCAAA TTTATCATGG TCTCAAGTGG CATATTTGTT     17820

TGGATAGAAT CTTGCAAGCT ATTAATGATC GTACTATAAT TTTTCAGCAC TTCGGTTGAC     17880

GTTAATTTTT GAAGGATAGC CACAATCACC TTTTGTTGAT GGCGCCCGCG GTCACGATCG     17940

CCATCTGCTA GGGAGTAGCG CTCACGAACA AAACCGAGAG CCTGTTCTGA ATCAAGATGA     18000

ACATTGCCTG CAGGGTAATA CTTTCCATTC GTATGGGCAG TAAATTCTTG ATCATTATAA     18060
```

358

```
ACATCAATTC CACCCAACAA ATCAATCAAT TTCAAAAACG AAGTGAAGTT CAATCGCACA    18120

TAGTAATTGA TATCCACTCC ATAGAGATTT TCTAAGGTGT GAATGGACGA ATCAACTCCA    18180

TAAATGCCCG CATGAGTCAA TTTATCTTTT TGATTATTTC CACCATCTGC GATTGGTACA    18240

TAGGCATCAC GTGGCGTTGT GGTCAAGAGG ATTTTCTTGG TATCTCGATT GACAGTCATC    18300

AGGATGTTGA CATCTGATCG CGACACCGAA CTAATAGGAC CATAGGTGTC AATTCCACTA    18360

ACATAGATAT TGAAAGACTG ACTCTTAGAC GTCTTAGGAG CTTCTACTTT TTTAGTGAAT    18420

CCCTTAGTAT AAATCTTTTT TATCTTCGAT GCGTAGTCTG GATACTCTGA CTCGATGATG    18480

TTTTCAAAGA CACTATTTAG GACAATGGCC TTAGTCTCCC CTGCAATCAA ACTCTTGTAA    18540

GCTGCCAAGT AAGACGAACT CTGGTTGACC GTCAAATCGG TATTCTGACT TGACTTGATA    18600

TCAGCTAGTA ATTTCTGAAT ATTTTCATTA TTAGTCCCAG TCGGTGCTGT CACACTCGTC    18660

AGTTGCGTAA CATTTTCGAT CTCACTATCT GCTAAAACAG CGACACTGAT TGAATATTCT    18720

GAGTAATTAG AAGTCGCATT TAAACGATTG GTCAGTCCAA CAAACTGCTG TACTGCAAAG    18780

AGCGACACAG AGCTGACAAG GATAGAGAAC ACCAACAGAA AAATAGTAAA CTTTTCAGCT    18840

TTTTTATAGA TAATCAAGAG TAGCCCTACC AAGGCAACTA GTAGGACTAA CGCAGTTACC    18900

ACTAGATTAA GATATCTAAA AGCAAGGATA TTGTACTTAA AGATTAAGAA CAATAAAAAA    18960

CAAACTAACA ATAAATAAAT AGTCAGCAAA ACTATATTAA CACTTCGCTT CACTTTCTGT    19020

GAACGTGATT TTTTAAAACG TCTACTCATG ATTAATACCT ATACATTGAA CATTATACGA    19080

TTATATCACT TTTTTACGGT AATGTCTACA CCTTTATTTT TACTATCTGC ATCTTTAAGT    19140

ATCTTAGTAG ACTTCCCGCG AAACAAAAAT ATAGTAAAAT GAAATAAGAA CAGAACAAAT    19200

CGTTCAGGAC AGTCAAATCG ATTTCTAACA ATGTTTTAGA AGCAGAGGTG             19250
```

(2) INFORMATION FOR SEQ ID NO: 36:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 21706 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

```
AAAGTTGAAA GACTGCTAGC TGTTTTTGAT ACCAATCGTT TCCAACTACA GAGCAAACAG     60

TATACAAAGT TTGTTTTTGG ATGTAAGCTT CTTGATGGAC AATTCCAAGA AAATCAAGAA    120

ATTGCTGACC TTCAATTTTT TGCCATTGAC CAACTGCCGA ACTTATCTGA AAAACGCATT    180

ACCAAGGAGC AAATAGAGCT TCTTTGGCAG GTTTATCAAG GTCATAGGGG GCAATATCTT    240
```

359

```
GACTAAGAAG ATGATTATCG TATTTCTAAA TCCATTTTTA ACAACTAGCA TGGTATAATA      300

ATATGCAGGA AAATTTTGAA TTATGAGGAA GACTAGATGA ATTTATGGGA TATTTTCTTT      360

ACGACTCAGG CAACCGAGCC GCCCAAATTT GACCTTTTTT GGTATGTTAG CCTATTTACG      420

CTCTTAGCCT TAACCTTTTA TACAGCCCAT CGCTATCGTG AAAAGAAGGT TTACCAACGA      480

TTTTTCCAAA TCTTGCAGAC TGTTCAGTTA ATCCTTCTTT ATGGTTGGTA CTGGGTCAAT      540

CATATGCCAC TGTCAGAAAG CCTACCCTTT TACCATTGCC GTATGGCTAT GTTTGTGGTA      600

CTCTTGCTTC CTGGTCAATC CAAATATAAA CAATACTTTG CATTATTGGG AACATTTGGG      660

ACATTAGCAG CCTTTGTTTA TCCAGTGCCA GATGCTTACC CTTTTCCACA TATCACCATT      720

CTATCCTTTA TCTTTGGTCA TTTAGCACTC TTGGGGAACT CTCTAGTTTA TCTATTGAGA      780

CAGTATAATG CGCGATTGCT GGATGTGAAG GGAATTTTTC TCATGACCTT TGCCCTAAAT      840

GCCTTGATTT TTGTGGTCAA TTTGGTGACA GGTGGCGATT ACGGATTTTT GACAAAACCG      900

CCATTGGTTG GGGATCACGG TCTAGTAGCT AATTATTTAC TTGTTTCAAT TGTGCTGGTA      960

GCTACTATCA GTTTGACTAA GAAAATCTTA GAATTCTTTT TAGCTCAAGA AGCAGAAAAA     1020

ATGATTGCAA AGGAAGCTTA ACACAGAGCT TTCTTTTTTG CTCTTAGAGA GTTTTTACAA     1080

GCAGCTTATA AAATAAGAAT TTCTGAATAG ACAAACTCAA AAAATGGCTG GGAAATTTAG     1140

GAAAAAAGCA AGCACGATTA AATTTTTTGT GTTATAATAT TTTGTGAATA GCTATGCCTA     1200

TGTTTAGCTA TGGAATAATA CGAAGTGCGA AACTTGGAAG ATAGAGAGGA AGCGATGTAA     1260

TGGCTAGAGA AGGCTTTTTT ACAGGTCTAG ATATTGGAAC AAGCTCTGTC AAGGTGCTTG     1320

TGGCCGAGCA GAGAAATGGT GAATTAAATG TAATTGGCGT GAGTAATGCC AAAAGTAAAG     1380

GTGTAAAGGA TGGAATTATT GTTGATATTG ATGCAGCAGC AACTGCTATC AAGTCAGCCA     1440

TTTCCCAAGC GGAAGAAAAG GCAGGCATTT CGATTAAATC AGTGAATGTC GGCTTGCCTG     1500

GTAATCTTTT GCAGGTAGAA CCAACTCAGG GGATGATTCC AGTAACATCT GATACTAAGG     1560

AAATTACGGA TCAAGATGTT GAAAATGTTG TCAAATCAGC TTTGACAAAG AGTATGACAC     1620

CTGACCGTGA AGTCATTACC TTTATTCCTG AAGAATTTAT TGTGGATGGT TTCCAAGGGA     1680

TTCGTGACCC ACGTGGCATG ATGGGGGTTC GCCTTGAAAT GCGTGGTTTG CTTTATACAG     1740

GACCTCGTAC TATCTTGCAC AATTTGCGTA AGACGGTTGA GCGTGCAGGT GTTCAGGTTG     1800

AAAATGTTAT CATTTCACCA CTAGCAATGG TTCAGTCTGT TTTGAACGAA GGGGAACGTG     1860

AATTTGGTGC TACAGTGATT GATATGGGGG CAGGTCAAAC GACTGTCGCT ACAATCCGTA     1920

ATCAAGAACT CCAGTTCACA CATATTCTCC AAGAAGGTGG AGATTATGTA ACTAAAGATA     1980
```

```
                                    360
TCTCCAAGGT TTTGAAAACC TCTCGCAAAT TAGCGGAAGG CTTGAAACTG AATTACGGGG      2040

AAGCCTATCC GCCTCTTGCA AGCAAAGAAA CCTTCCAAGT AGAGGTTATT GGAGAAGTAG      2100

AAGCAGTCGA AGTGACGGAA GCCTACTTGT CAGAAATTAT TTCTGCACGA ATCAAGCACA      2160

TCCTTGAACA AATCAAGCAA GAATTAGATA GAAGGCGTCT ATTGGACCTC CCTGGTGGTA      2220

TTGTCTTAAT CGGTGGGAAT GCCATTTTAC CAGGTATGGT TGAGCTTGCT CAGGAAGTCT      2280

TTGGCGTCCG TGTCAAGCTT TATGTTCCAA ATCAAGTTGG TATCCGTAAT CCAGCCTTTG      2340

CGCATGTGAT TAGTTTATCA GAATTTGCGG GTCAATTAAC AGAAGTTAAT CTTTTGGCTC      2400

AGGGAGCGAT AAAAGGTGAG AATGACTTAA GTCATCAGCC AATTAGTTTT GGTGGGATGC      2460

TGCAAAAAAC AGCTCAGTTT GTACAATCAA CGCCTGTTCA ACCAGCTCCT GCTCCAGAAG      2520

TAGAGCCGGT GGCGCCTACA GAACCAATGG CGGATTTCCA ACAAGCTTCA CAAAATAAAC      2580

CGAAATTAGC AGATCGTTTC CGTGGATTGA TCGGAAGCAT GTTTGACGAA TAAAGAGGAA      2640

AAATAAATTA TGACATTTTC ATTTGATACA GCTGCTGCTC AAGGGGCAGT GATTAAAGTA      2700

ATTGGTGTCG GTGGAGGTGG TGGCAATGCC ATCAACCGTA TGGTCGACGA AGGTGTTACA      2760

GGCGTAGAAT TTATCGCAGC AAACACAGAT GTACAAGCAT TGAGTAGTAC AAAAGCTGAG      2820

ACTGTTATTC AGTTGGGACC TAAATTGACT CGTGGTTTGG GTGCAGGAGG TCAACCTGAG      2880

GTTGGTCGTA AAGCCGCTGA AGAAAGCGAA GAAACACTGA CGGAAGCTAT TAGTGGTGCC      2940

GATATGGTCT TCATCACTGC TGGTATGGGA GGAGGCTCTG GAACTGGAGC TGCTCCTGTT      3000

ATTGCTCGTA TCGCCAAAGA TTTAGGTGCG CTTACAGTTG GTGTTGTAAC ACGTCCCTTT      3060

GGTTTTGAAG GAAGTAAGCG TGGACAATTT GCTGTAGAAG GAATCAATCA ACTTCGTGAG      3120

CATGTAGACA CTCTATTGAT TATCTCAAAC AACAATTTGC TTGAAATTGT TGATAAGAAA      3180

ACACCGCTTT TGGAGGCTCT TAGCGAAGCG GATAACGTTC TTCGTCAAGG TGTTCAAGGG      3240

ATTACCGATT TGATTACCAA TCCAGGATTG ATTAACCTTG ACTTTGCCGA TGTGAAAACG      3300

GTAATGGCAA ACAAAGGGAA TGCTCTTATG GGTATTGGTA TCGGTAGTGG AGAAGAACCT      3360

GTGGTAGAAG CGGCACGTAA GGCAATCTAT TCACCACTTC TTGAAACAAC TATTGACGGT      3420

GCTGAGGATG TTATCGTCAA CGTTACTGGT GGTCTTGACT TAACCTTGAT TGAGGCAGAA      3480

GAGGCTTCAC AAAATTGTGAA CCAGGCAGCA GGTCAAGGAG TGAACATCTG GCTCGGTACT      3540

TCAATTGATG AAAGTATGCG TGATGAAATT CGTGTAACAG TTGTTGCAAC GGGTGTTCGT      3600

CAAGACCGCG TAGAAAAGGT TGTGGCTCCA CAAGCTAGAT CTGCTACTAA CTACCGTGAG      3660

ACAGTGAAAC CAGCTCATTC ACATGGCTTT GATCGTCATT TTGATATGGC AGAAACAGTT      3720

GAATTGCCAA AACAAAATCC ACGTCGTTTG GAACCAACTC AGGCATCTGC TTTTGGTGAT      3780
```

361

```
TGGGATCTTC GCCGTGAATC GATTGTTCGT ACAACAGATT CAGTCGTTTC TCCAGTCGAG      3840

CGCTTTGAAG CCCCAATTTC ACAAGATGAA GATGAATTGG ATACACCTCC ATTTTTCAAA      3900

AATCGTTAAG TAAATGAATG TAAAAGAAAA TACAGAACTT GTTTTTCGAG AAGTTGCAGA      3960

GGCTAGTCTG AGTGCTCATC GAGAGAGTGG TTCGGTCTCT GTCATTGCAG TTACCAAGTA      4020

TGTAGATGTA CCGACAGCGG AAGCCTTGCT TCCGCTAGGT GTCCATCATA TCGGTGAAAA      4080

TCGTGTAGAT AAGTTTCTGG AAAAATATGA AGCTTTAAAA GATCGAGATG TGACTTGGCA      4140

TTTGATTGGT ACCTTGCAAA GACGTAAGGT GAAAGATGTC ATTCAATACG TTGATTATTT      4200

CCATGCATTG GACTCAGTAA AGCTAGCAGG GGAAATTCAA AAAGAAGTG ACCGAGTCAT       4260

CAAGTGTTTC CTTCAAGTAA ATATTTCTAA AGAAGAAAGC AAACACGGTT TTTCGAGAGA      4320

GGAACTGCTG GAAATCTTGC CAGAGTTAGC CAGACTAGAT AAGATTGAAT ATGTTGGTTT      4380

AATGACGATG GCACCTTTTG AGGCTAGCAG TGAGCAGTTG AAAGAGATTT TCAAGGCGGC      4440

CCAAGATTTA CAAAGAGAAA TTCAAGAGAA ACAAATTCCA AATATGCCTA TGACCGAGTT      4500

AAGTATGGGA ATGAGTCGTG ATTATAAAGA AGCGATTCAA TTCGGTTCCA CTTTTGTTCG      4560

TATAGGTACA TCATTTTTTA AGTAGGAGAG AACCATGTCT TTAAAAGATA GATTCGATAG      4620

ATTTATAGAT TATTTTACGG AGGATGAGGA TTCAAGTCTC CCTTATGAAA AAAGAGATGA      4680

GCCTGTGTTT ACTTCAGTAA ATTCTTCACA GGAACCGGCT CTCCCAATGA ATCAACCTTC      4740

ACAGTCGGCT GGCACAAAAG AGAACAATAT CACCAGACTT CATGCAAGAC AACAGGAATT      4800

GGCAAATCAG AGTCAGCGTG CAACGGATAA GGTCATTATA GATGTTCGTT ATCCTAGAAA      4860

ATATGAGGAT GCAACAGAAA TTGTTGATTT ATTGGCAGGA AACGAAAGTA TCTTGATTGA      4920

TTTTCAGTAT ATGACAGAGG TGCAGGCTCG TCGTTGTTTG GACTATTTGG ATGGAGCTTG      4980

TCATGTTTTA GCTGGAAATT TGAAAAAGGT AGCTTCTACC ATGTATTTGT TGACACCAGT      5040

GAACGTTATT GTAAATGTTG AAGATATCCG TTTACCAGAT GAAGATCAAC AGGGTGAGTT      5100

CGGTTTTGAT ATGAAGCGAA ATAGAGTACG ATAATGATTT TTTTAATTCG TATGATTTAT      5160

AATGCAGTGG ATATTTACTC CCTGATTTTG GTAGCCTTCG CTGTCATGTC TTGGTTTCCA      5220

GGTGCCTACG AATCCAGTTT AGGTCGTTGG ATTGTAGCGT TGGTGAAACC AGTGCTTGCT      5280

CCCTTGCAAC GCCTGCCTTT ACAGATAGCG GGTCTTGATT TATCTGTTTG GGTTGCGATT      5340

GTTTTGGTTC GATTTTTAGG AGAAAACCTA GTGCGTTTTC TGGCGATGAT AGGATGAATA      5400

AAGGGATTTA TCAGCATTTC TCCATAGAAG ATCGTCCATT TCTTGACAAG GGAATGGAAT      5460

GGATAAAGAA GGTAGAAGAT AGCTATGCTC CTTTTTTAAC TCCTTTTATC AATCCTCATC      5520
```

362

```
AGGAGAAGCT ATTAAAGATT TTGGCCAAAA CCTATGGTCT TGCTTGTAGC AGTAGTGGGG    5580

AATTCGTCTC GAGTGAGTAT GTTCGAGTTT TATTATACCC AGATTATTTC CAACCAGAGT    5640

TTTCAGATTT TGAAATATCT CTCCAGGAAA TTGTGTATTC CAATAAATTT GAACATTTAA    5700

CGCATGCTAA GATTTTAGGG ACAGTCATCA ATCAATTAGG GATTGAACGG AAACTTTTTG    5760

GAGATATCCT AGTAGATGAA GAACGGGCGC AGATTATGAT TAATCAGCAG TTTCTTCTTC    5820

TCTTTCAAGA TGGACTAAAG AAAATTGGTC GTATACCTGT TTCGCTGGAG GAACGTCCTT    5880

TCACCGAGAA AATAGATAAG CTAGAACAGT ATCGAGAACT GGATTTATCT GTGTCTAGTT    5940

TTCGATTAGA TGTTCTTTTA TCAAATGTTT TGAAACTATC TAGGAATCAA GCAAACCAGT    6000

TGATTGAAAA GAAACTTGTC CAAGTAAATT ATCATGTGGT AGACAAATCA GATTACACTG    6060

TTCAAGTTGG AGACTTGATT AGTGTGAGAA AATTTGGTCG CTTGAGATTA CTTCAAGATA    6120

AGGGACAAAC GAAAAAAGAG AAGAAAAAAA TAACCGTCCA GTTATTATTA AGTAAGTGAG    6180

GAATAGAATG CCAATTACAT CATTAGAAAT AAAGGACAAG ACTTTTGGAA CTCGATTCAG    6240

AGGTTTTGAT CCAGAAGAAG TCGATGAATT TTTAGATATT GTGGTTCGTG ATTACGAAGA    6300

TCTTGTGCGT GCGAATCATG ATAAAAATTT GCGTATTAAG AGTTTAGAAG AGCGTTTGTC    6360

TTACTTTGAT GAAATAAAAG ATTCATTGAG CCAGTCTGTA TTGATTGCTC AGGATACAGC    6420

TGAGAGAGTG AAACAGGCGG CGCATGAACG TTCAAACAAT ATCATTCATC AAGCAGAGCA    6480

AGATGCGCAA CGCTTGTTGG AAGAAGCTAA ATATAAGGCA AACGAGATTC TTCGTCAAGC    6540

AACTGATAAT GCTAAGAAAG TCGCTGTTGA AACAGAAGAA TTGAAGAACA AGAGCCGTGT    6600

CTTCCACCAA CGTCTCAAAT CTACAATTGA GAGTCAGTTG GCTATTGTTG AATCTTCAGA    6660

TTGGGAAGAT ATTCTCCGTC CAACAGCTAC TTATCTTCAA ACCAGTGATG AAGCCTTTAA    6720

AGAAGTGGTT AGCGAAGTAC TTGGAGAACC GATTCCAGCT CCAATTGAAG AAGAACCAAT    6780

TGATATGACA CGTCAGTTCT CTCAAGCAGA AATGGCAGAA TTACAAGCTC GTATTGAGGT    6840

AGCCGATAAA GAATTGTCTG AATTTGAAGC TCAGATTAAA CAGGAAGTGG AAGCTCCAAC    6900

TCCTGTAGTG AGTCCTCAAG TTGAAGAAGA GCCTCTGCTC ATCCAGTTGG CCCAATGTAT    .6960

GAAGAACCAG AAGTAGCTCC AATGCATCCG ATAGGTCCAA CACCAGCTAC AGAAACTGTT    7020

GATTCAATAC CGGGATTTGA AGCACCGCAA GAATCTGTTA CAATTTTATA AGAAATATTC    7080

TGAGAACAAT ATCTTATCCT TATATTCCA GCGAGCAGGA GATGGTGTGA GTCCTGTAAT    7140

CCCTATTGAT AAGATTATCC TCTCAAAAAC TCAAGTCTGA AGCTAGTAAG ATTTGACGTT    7200

TCCCACGTTA CGGGATAAGA GGGAGAAAGA CTAAATCTTT TTCCGAATAA AGGTGGTACC    7260

ACGATTTTCG TCCTTTTTGG AAGTCGTGGT TTTTAATTTG TTATTATTTA TAAAGGAGAT    7320
```

363

```
ACCATGAAAC TCAAAGACAC CCTTAATCTT GGGAAAACTG AATTCCCAAT GCGTGCAGGC      7380

CTTCCTACCA AAGAGCCAGT TTGGCAAAAG GAATGGGAAG ATGCAAAACT TTATCAACGT      7440

CGTCAAGAAT TGAACCAAGG AAAACCTCAT TTCACCTTGC ATGATGGCCC TCCATACGCT      7500

AACGGAAATA TCCACGTTGG ACATGCTATG AACAAGATTT CAAAAGATAT CATTGTTCGT      7560

TCTAAGTCTA TGTCAGGATT TTACGCACCA TTTATTCCTG GTTGGGATAC TCATGGTCTG      7620

CCAATCGAGC AAGTCTTGTC AAAACAAGGT GTCAAACGTA AAGAAATGGA CTTGGTTGAG      7680

TACTTGAAAC TTTGCCGTGA GTACGCTCTT TCTCAAGTAG ATAAACAACG TGAAGATTTT      7740

AAACGTTTGG GTGTTTCTGG TGACTGGGAA AATCCATATG TGACCTTGAC TCCTGACTAT      7800

GAAGCAGCTC AAATTCGTGT ATTTGGTGAG ATGGCTAATA AGGGTTATAT CTACCGTGGT      7860

GCTAAGCCAG TTTACTGGTC ATGGTCATCT GAGTCAGCAC TTGCTGAAGC AGAGATTGAA      7920

TACCATGACT TGGTTTCAAC TTCCCTTTAC TATGCCAACA AGGTAAAAGA TGGCAAAGGA      7980

GTTCTAGATA CAGATACTTA TATCGTTGTC TGGACAACGA CTCCATTTAC CATCACAGCT      8040

TCTCGTGGTT TGACGGTTGG TGCAGATATT GATTACGTTT TGGTTCAACC TGCTGGTGAA      8100

GCTCGTAAGT TTGTCGTTGC TGCTGAATTA TTGACTAGCT TGTCTGAGAA ATTTGGCTGG      8160

GCTGATGTTC AAGTTTTGGA AACTTACCGT GGCCAAGAAC TCAACCACAT CGTAACAGAA      8220

CACCCATGGG ATACAGCTGT AGAAGAGTTG GTAATTCTTG GTGACCACGT TACGACTGAC      8280

TCTGGTACAG GTATTGTCCA TACAGCCCCT GGTTTTGGTG AGGACGATTA CAATGTTGGT      8340

ATTGCTAATA ATCTTGAAGT CGCAGTGACT GTTGATGAAC GTGGTATCAT GATGAAGAAT      8400

GCTGGTCCTG AATTTGAAGG TCAATTCTAT GAAAAGGTAG TTCCAACTGT TATTGAAAAA      8460

CTTGGTAACC TCCTTCTTGC CCAAGAAGAA ATCTCTCACT CATATCCATT TGACTGGCGT      8520

ACTAAGAAAC CAATCATCTG GCGTGCAGTT CCACAATGGT TTGCCTCAGT TTCTAAATTC      8580

CGTCAAGAAA TCTTGGACGA AATTGAAAAA GTGAAATTCC ACTCAGAATG GGGTAAAGTC      8640

CGTCTTTACA ATATGATCCG TGACCGTGGT GACTGGGTTA TCTCTCGTCA ACGTGCTTGG      8700

GGTGTTCCAC TTCCTATCTT CTACGCTGAA GATGGTACAG CTATCATGGT AGCTGAAACT      8760

ATTGAACACG TAGCTCAACT TTTTGAAGAA TATGGTTCAA GCATTTGGTG GGAACGTGAT      8820

GCCAAAGACC TCTTGCCAGA AGGATTTACT CATCCAGGTT CACCAAACGG CGAGTTCAAA      8880

AAAGAAACTG ATATCATGGA CGTTTGGTTT GACTCAGGTT CATCATGGAA TGGAGTGGTG      8940

GTAAACCGTC CTGAATTGAC TTACCCAGCC GACCTTTACC TAGAAGGTTC TGACCAATAC      9000

CGTGGTTGGT TTAACTCATC ACTTATCACA TCTGTTGCCA ACCATGGCGT AGCACCTTAC      9060
```

364

```
AAACAAATCT TGTCACAAGG TTTTGCCCTT GATGGTAAAG GTGAGAAGAT GTCTAAATCT    9120

CTTGGAAATA CTATTGCTCC AAGCGATGTT GAAAAACAAT TCGGTGCTGA AATCTTGCGT    9180

CTCTGGGTAA CAAGTGTTGA CTCAAGCAAT GACGTGCGTA TCTCTATGGA TATCTTGAGC    9240

CAAGTTTCTG AAACTTACCG TAAGATTCGT AACACTCTTC GTTTCTTGAT TGCCAATACA    9300

TCTGACTTTA ACCCAGCTCA AGATACAGTC GCTTACGATG AGCTTCGTTC AGTTGATAAG    9360

TACATGACGA TTCGCTTTAA CCAGCTTGTC AAGACCATTC GTGATGCCTA TGCAGACTTT    9420

GAATTCTTGA CGATCTACAA GGCCTTGGTG AACTTTATCA ACGTTGACTT GTCAGCCTTC    9480

TACCTTGATT TTGCCAAAGA TGTTGTTTAC ATTGAAGGTG CCAAATCACT GGAACGCCGT    9540

CAAATGCAGA CTGTCTTCTA TGACATTCTT GTCAAAATCA CCAAACTCTT GACACCAATC    9600

CTTCCTCACA CTGCGGAAGA AATCTGGTCA TATCTTGAGT TTGAAACAGA AGACTTCGTC    9660

CAATTGTCAG AATTACCAGA AGTTCAAACT TTTGCTAACC AAGAAGAAAT CTTGGATACA    9720

TGGGCAGCCT TCATGGACTT TCGTGGACAA GCACAAAAAG CCTTGGAAGA AGCTCGTAAT    9780

GCAAAAGTTA TCGGTAAATC ACTTGAAGCA CACTTGACAG TTTATCCAAA TGAAGTTGTG    9840

AAAACTCTAC TCGAAGCAGT AAACAGCAAT GTAGCACAAC TTTTGATCGT GTCTGAGTTG    9900

ACCATCGCAG AAGGACCAGC TCCGGAAGCT GCCCTTAGCT TCGAAGATGT AGCCTTCACA    9960

GTTGAACGTG CTACTGGTGA AGTATGTGAC CGTTGCCGTC GTATCGACCC AACAACAGCA    10020

GAACGCAGCT ACCAGGCAGT TATCTGTGAC CACTGTGCAA GCATCGTAGA AGAAAACTTT    10080

GCGGAAGCAG TCGCAGAAGG ATTTGAAGAG AAATAAGATT GAAAAGTCTA GGCAAAATTC    10140

AATTTGAGAA GAAAAGACAA CTAATTTTAT AGTCTATTAA ACGCATTGTA TCACGTTTTT    10200

GAATACCTGA TATGATGCGT TTTTTATTTA TTTTAAAAAT TTGCGAGGTA TGACTTTTTA    10260

TACTCAACAA GAATCAAAGA GAAACTTAGC AAGCTAACAG TAGTAAGATA AAATAGGAAT    10320

TTGATATTAG GGATAAGATT GGTAAATAGT GTAATATTTT TACAACAATA AATTTATATA    10380

GTTATTTCTG GTTTCTGAAA AGTATTATAT TTTATTTCAT ATTATACAAA TTTTTATTTT    10440

ATAATATCAG AACATACTTT TTTTAAAAGC AAATATGATA CAATTTTATT TGAAAAAAAT    10500

AAAAAAGGAG ATTTTATTAT AAAATTAAAA AGACTTGCTT TAATTAGTGG TATCGTCGGT    10560

CTTGTGGGAG GAATTTTACT TCTTATTGGT CCTTTTGTCT TGTTGGGAAT AGCGGTAAAC    10620

ACAGCTGCTA CAACTCTTAA TGGAGGAGCT ACTGCAGGGG CTTTTTCAGG TGTAGCCTTA    10680

CTCTTGAATG CCTTGAAGAT TGCAAATCTT GTTCTTGGTA TCATTGCTAT TGTTTACTAT    10740

AAAGGAGATA AGCGTGTAGG TGCAGCTCCG TCTGTACTAA TGATTGTTTC TGGTGGAGTT    10800

AGTCTCATTC TATTCCGTTC TTAGGATGGG TTGGGGGGAT TTTTGCTATT ATCGGAGGAT    10860
```

365

```
CTCTATTCCT TTCAACATTG AAGAAATTCA AATCAGAAGA ATAAAAGGTA TTTTAGCATG    10920

AAAAGAACAA AAAAGTTTAT CGGTATAGGA GTAGCTCTAT TATCTCTTTC TCTTCTAGTT    10980

GCATGTGGAA CATAAAGTTC AAAGAATACT TCAACAAGTA ATGATGAGAA GACAGTAGCA    11040

ACATCCAATA GTTCAAAAGA AACAATCACT TTCGATACAC CGGTTGTAAC AGACGATGCG    11100

ATTGAATCAA TACGCACTTA TGCAGATTAT ATAGATCTTT ATAAAAATAT TTTTGATGAT    11160

TATTTTACTA AAGCTGAGGA AGGTTTCAAA GGCATAGCTA TGGAAAATAA TGACTCGTTT    11220

ACTAAACTAA AAGAGTCAAC TCAAAAATTA TTCGATGCGC AGAAAAAAAG GTTAAATAAT    11280

GAAGATAGAA TAGAAACAAC CAAAAACAAT GTGATTGCCA AACATTGTCA AACAGTCCTT    11340

TCCTTTTTGG TTTTGACTAG CTTTTTTGTG AAAAATTGTG TAAAATAGAA TAGATAAACG    11400

AGGGGAAACC TCGGAAAATT TAAAGGAGAA TCCATCTAAT GGTAAAATTG GTTTTTGCTC    11460

GCCACGGTGA GTCTGAATGG AACAAAGCTA ACCTTTTCAC TGGTTGGGCT GATGTTGATT    11520

TGTCTGAAAA AGGTACACAA CAAGCGATTG ACGCTGGTAA ATTGATCAAA GAAGCTGGTA    11580

TCGAATTTGA CCAAGCTTAC ACTTCAGTAT TGAAACGTGC TATCAAAACA ACTAACTTGG    11640

CTCTTGAAGC TTCTGACCAA TTGTGGGTTC CAGTTGAAAA ATCATGGCGC TTGAACGAAC    11700

GTCACTACGG TGGTTTGACT GGTAAAAACA AAGCTGAAGC TGCTGAACAA TTTGGTGATG    11760

AGCAAGTTCA CATCTGGCGT CGTTCATACG ATGTATTGCC TCCAAACATG GACCGTGATG    11820

ATGAGCACTC AGCTCACACA GACCGTCGTT ACGCTTCACT TGACGACTCA GTTATCCCAG    11880

ATGCTGAAAA CTTGAAAGTG ACTTTGGAAC GTGCTCTTCC ATTCTGGGAA GATAAAATCG    11940

CTCCAGCTCT TAAAGATGGT AAAAACGTAT TCGTAGGAGC TCACGGTAAC TCAATCCGTG    12000

CCCTTGTAAA ACACATCAAA GGTTTGTCAG ATGACGAGAT CATGGACGTG GAAATCCCTA    12060

ACTTCCCACC ATTGGTATTC GAATTCGACG AAAAAATTGAA CGTCGTTTCT GAATACTACC    12120

TTGGAAAATA AAAAATTGTA AGTCTAGAAT TGATTTCTAG`GCTTTTTATG TTAGTATGGA    12180

AGTATGATAA GGAATAAAAA ACAAGATTAT GTACTGGCCT ACAAGCAACC AGCTTCAACC    12240

ACTTACATGG GTTGGGAAGA AGAAGCTTTA CCGATAGGCA ATGGTTCTTT AGGAGCAAAA    12300

GTATTTGGCC TTATAGGGGC TGAACGGATT CAATTTAATG AAAAAAGTCT CTGGTCTGGA    12360

GGTCCACTTC CTGATAGTTC AGATTATCAG GGTGGAAATC TTCAGGATCA GTATGTTTTT    12420

TTAGCTGAGA TTCGGCAGGC TTTGGAGAAG AGAGATTACA ATCTGGCTAA GGAACTGGCT    12480

GAGCAGCACC TAATTGGGCC AAAAACGAGT CAATATGGGA CCTATCTGTC TTTTGGGGAT    12540

ATTCACATTG AGTTCAGCCA GCAAGGTACG ACTTTGTCTC AGGTGACGGA CTATCAGAGA    12600
```

366

```
CAGCTGAATA TTAGTAAGGC ACTTGCGACG ACTTCTTATG TCTATAAGGG AACGCGATTT      12660

GAACGTAAAG CTTTTGCGAG TTTTCCAGAT GATCTCTTGG TTCAATGTTT TACTAAGGAA      12720

GGGTTGGAAA CTCTAGATTT TACTATAGAA CTATCCTTGA CCTGTGATTT GGCTTCTGAT      12780

GGAAAGTATG AGCAGGAAAA ATCTGATTAC AAGGAGTGTA AGTTGGATAT TACTGATTCT      12840

CATATCTTGA TGAAGGGAAG AGTTAAGGAT AATGATCTGC GGTTTGCTAG TTATCTAGCT      12900

TGGGAAACGG ATGGAGATAT TAGAGTTTGG TCAGATAGGG TTCAGATATC AGGAGCCAGT      12960

TATGCCAATC TCTTCTTGGC CGCTAAGACG GATTTTGCCC AAAATCCTGC TAGCAATTAT      13020

CGCAAGAAAC TAGATTTAGA GCAACAGGTG ATAGACTTGG TGGACACAGC TAAAGAAAAG      13080

GGCTATACCC AATTGAAATC AAGGCATATC GAGGACTACC AAGCCTTATT CCAGCGTGTT      13140

CAATTGGATT TGGAAGCTGA TGTTGACGCA TCCACTACAG ATGATTTGTT AAAAAATTAT      13200

AAGCCACAAG AAGGGCAGGC TTTGGAGGAG CTGTTCTTCC AGTATGGACG GTATTTATTG      13260

ATTAGTTCGT CCAGAGACTG CCCAGATGCT CTACCAGCTA ACCTACAGGG AGTCTGGAAT      13320

GCGGTCGACA ATCCTCCTTG GAATTCGGAC TATCACTTAA ATGTCAATCT GCAGCTGAAT      13380

TATTGGCCAG CCTATGTTAC CAATCTCCTA GAGACGGTCT TTCCAGTCAT CAACTATGTA      13440

GATGATTTGC GTGTCTATGG TCGTCTAGCG GCTGTAAAGT ATGCAGGAAT CGTCTCTCAG      13500

AAAGGTGAGG AGAATGGTTG GTTGGTTCAT ACTCAAGCGA CTCCCTTTGG TTGGACGGCA      13560

CCTGGTTGGG ATTACTATTG GGGTTGGTCA CCAGCTGCCA ATGCGTGGAT GATGCAAACC      13620

GTTTATGAAG CCTATTTATT TTATAGGGAC CAAGACTATC TCAGGGAGAA AATTTATCCC      13680

ATGTTGAGGG AAACGGTTCG TTTTTGGAAT GCCTTTTTAC ATAAGGATCA GCAGGCGCAG      13740

CGTTGGGTGT CTTCTCCGTC TTATTCCCCA GAACATGGGC CGATTTCGAT TGGCAATACC      13800

TATGACCAAT CTCTGATTTG GCAGTTATTT CATGATTTTA TTCAGGCTGC TCAGGAATTG      13860

GGACTGGATG AGGACTTGTT GACTGAGGTT AAGGAGAAGT CTGATTTACT AAATCCTTTG      13920

CAAATCACTC AATCTGGTCG AATCAGGGAG TGGTATGAGG AGGAAGAGCA GTATTTTCAA      13980

AATGAGAAAG TGGAGGCCCA GCATCGGCAC GCTTCCCATC TAGTGGGACT CTATCCTGGC      14040

AATCTCTTTA GCTACAAGGG ACAAGAGTAT ATTGAAGCGG CGCGTGCTAG CCTCAATGAT      14100

CGTGGAGATG GCGGCACAGG CTGGTCCAAG GCTAATAAGA TCAATCTCTG GGCGCGTTTG      14160

GGAGATGGCA ATCGAGCCCA TAAATTATTG GCAGAGCAGT TAAAGACATC CACCTTGCAA      14220

AATCTTTGGT GTAGCCATCC TCCTTTTCAG ATAGATGGTA ATTTTGGTGC TACTAGTGGC      14280

ATGGCAGAAA TGTTACTCCA GTCTCATGCA GCTTATCTGG TACCTCTAGC TGCCCTACCT      14340

GATGCTTGGT CAACAGGTTC TGTTTCAGGC TTAATGGCAC GTGGACATTT TGAAGTGAGC      14400
```

```
ATGAGCTGGG AAGATAAAAA ACTCTTACAG TTGACCATTT TATCAAGGAG TGGAGGAGAT   14460

TTGCGAGTTT CTTATCCAGA TATTGAGAAG AGTGTGATTA AAATGAATCA AGAAAAAATA   14520

AAAGCGAAAT GCATGGGGAA AGATTGTATT TCGGTGGCAA CAGCAGAAGG TGATCTTGTT   14580

CAATTTTATT TTTAAGAAGA TGTTATAAGG CAGTAATTTG AAACTGCCTT TTAATAAGGA   14640

TTTAAGAATA TAAGCAGTTT TCAACTAGTT GAAAAAACGT TATAATGATA ATAGGAAGTA   14700

ATACTCAATG AAAATCAAAG AGCACAAACT AGGAAGCTAG CCGCAGGTTG CTCAAAACAG   14760

TGTTTTGAGG TTGCAGATGG AAGCTGACGT GGTTTGAAGA GAGATTTTCG AGGAGTATAA   14820

TTTGTTTGAT AGAGGGTGGG TCTGATGGCT TATATTGAGA TGAAACACTG TTACAAGCGT   14880

TATCAGGTTG GGGACACGGA GATTGTGGCC AATTGTGATG TGAATTTTGA GATTGAAAAG   14940

GGGGAGCTGG TTATTATCCT TGGTGCTTCA GGTGCAGGCA AGTCAACAGT TCTTAACCTT   15000

CTTGGGGGAA TGGATACCAA TGATGAAGGG GAAATCTGGA TTGATGGTGT TAATATTGCG   15060

GATTATAGTT CCCACCAGCG CACCAATTAC CGTAGAAATG ATGTGGGGTT TGTTTTTCAG   15120

TTTTATAATC TAGTTTCTAA TCTGACAGCT AAGGAAAATG TGGAACTGGC TTCTGAAATT   15180

GTGACAGATG CCTTGAATCC TGATCAGGCC TTGACAGATG TAGGTCTGGC TCATCGTCTC   15240

AATAACTTTC CAGCCCAGCT TTCTGGAGGG GAGCAACAGC GAGTCTCCAT TGCACGCGCG   15300

GTAGCCAAAA ATCCTAAAAT TCTCCTTTGT GATGAACCGA CTGGAGCCTT GGATTATCAG   15360

ACGGCCAAGC AGGTTTTGAA AATTCTCCAA GACATGTCTC GTCAAAAGGG AGCGACGGTG   15420

ATCATCGTGA CTCATAATGG AGCTTTGGCG CCCATTGCTG ATCGCGTGAT TCAAATGCAC   15480

GATGCCAGTG TCAAGGATGT GGTGCTCAAC CAGCATCCTC AGGATATTGA CAGTTTGGAG   15540

TACTAGCATG ATCAAGCGAA AAACTTATTG GAAGGACTTA GTTCAGTCCT TCACAGGCTC   15600

CAAGGGGCGT TTTTTATCCA TCTTGATCCT GATGATGTTG GGATCTCTAG CCTTAGTAGG   15660

CCTCAAAGTA ACCAGTCCCA ACATGGAGGC GACAGCTAAT GCTTATTTAA CAACTGCTCA   15720

AACCTTGGAT TTGGCAGTCA TGTCTAACTA TGGCTTGGAT CAAGCAGACC AAGAAGAACT   15780

AAAACAGACG GAGGGCGCAG AGGTCGAGTT TGGCTATTTG ACAGATGTGA CTATGGATAA   15840

TGGGCAGGAT GCCATTCGGC TGTACTCCAA ACCAGAGCGA ATTTCAACCT TTCAGCTAAG   15900

AAAGGGACGA CTTCCTCAGT CAGACAAGGA AATCGCTTTG GCCACTCATT TGCAAGGCCA   15960

ATACAGCGTG GGACAGGAGA TTAGTTTTAA AGAAAAAGAA GAGGGTCATT CCTCTTTAAA   16020

AGACCATACT TATACCATTA CTGGTTTTGT GGATTCGGCT GAAATCCTCT CCCAGCGAGA   16080

TATGGGCTAC GCAGGAAGTG GAAGTGGGAC TCTGACAGCC TATGGGGTGA TTTTACCTAG   16140
```

368

```
TCAATTTGAT CAGAAAGTCT ACAATATAGC TCGTTTGAAA TATCAAGATT TAGCGGGTTT     16200

AAATGCCTTT TCATCAGCTT ATGAAGAAAA ATCCAAGCAA CATCAAGAAG AGCTTGAACA     16260

AATTTTATCA GATAATGGCA AGGTACGTCT GCAACTTTTG AAAAAAGAAG GACAAGAGTC     16320

TCTAGACAAG GGGCAAGAGA CCCTTGACAA GGCTCAGACT AATTTGCAGG AAGGCAAGCG     16380

TCGTTTAGCA GCTGCTCAAG CTCGTATACA GGCTCAAGAA AGTCAACTAG CCTTGTTTCC     16440

TCAAGTTCAG AGAGAGCAGG CTAGTGCTCA ACTTACCCAA GCCAAGCAGG AATTGGGCAA     16500

GGAAGAGGAC AAACTAAAGC AAGCTGAACA AAATCTAGCC CAAGAAAAGG AAAAATTAGA     16560

AAAACATCAG CAAGTCTTGG ATGATTTGGC GGAGCCAAGG TATCAGGTTT ATAATCGTCA     16620

GACCATGCCA GGTGGTCAGG CTATCTTAT GTATAGCAAT GCTTCATCCA GTATTCGAGC      16680

AGTGGGCAAT ATCTTTCCTG TGGTACTTTA TGCCGTAGCA GCCATGGTGA CCTTTACGAC     16740

CATGACTCGC TTTGTAGACG AAGAGCGAAC TCATGCAGGG ATTTTTAAGG CCTTGGGTTA     16800

TCGTAGTAAG GATATTATCG CCAAGTTTCT CCTTTATGGA CTAGTAGCTG GGACTGTCGG     16860

AACGGCTCTA GGTAGTATAC TTGGTCATTA TTTGCTAGCC AGTGTAATTT CAAGTGTCAT     16920

TACAAAAGGC ATGGTGGTGG GAGAAACTCA GATTCAGTTC TATTGGACCT ATAGCTTACT     16980

AGCTTTTGTC TTGAGCTTGT TGGCGAGTGT GTTACCAGCC TATCTGGTGG CTTGGAGGGA     17040

ACTTCATGAC GAAGCAGCCC AGCTTCTACT TCCTAAACCT CCTGTCAAAG GAGCTAAAAT     17100

CTTATTGGAG CGTATCGGTT TTATCTGGCG TCGTCTCAGT TTTACTCATA AGGTAACAGC     17160

CCGCAACATC TTTCGTTATA AGCAGAGAAT GTTGATGACA ATCTTTGGTG TGGCAGGTTC     17220

TGTAGCTCTG CTCTTTGCAG GTTTGGGAAT CCAATCTTCT GTAGCAGGAG TTCCGTCTAA     17280

ACAGTTTCAA CAAATCCAAC AGTATCAGAT GCTTGTCTCT GAAAATCCTA GTGCGACCAA     17340

TCAGGACAAG GTAGAGCTAG CAGAAGTGTT GAAAGGGCAG GAGATACTAG CCTACCAGAA     17400

AATCTATTCT AAAGCGCTAT ACAAGGATTT CAAAGGCAAA GCTGGTCTTC AAAACATTAC     17460

TCTTATGATG ATAGAGAAGG AAGATTTGAC TCCCTTTATC CATCTTCAAC ATCATCAGCA     17520

GGAGCTGACA TTAAAAGATG GCATCGTTAT TACAGCTAAA CTCGCCCAGC TGGCAGGTGT     17580

CAAGGTTGGG CAGACTTTAG AAATTGAAGG TAAGGAACTA AAGGTCGTTG CTATTACTGA     17640

GAACTACGTT GGTCACTTTA TTTATATGAG TCAGGCTAGC TATGAGCAAC TTTACGGACA     17700

GCTACCCCAA GCCAACACTT ATCTGGTCTC ATTAAGGGAT ACCAGTGCAA CTAGTATCGA     17760

AAGTCAGGCG GGCTTGCTTA TGAATCAATC TGCGGTGTCC AGCGTTGTCC AAAATGCTTC     17820

AGCCATTCGA CTCTTCGACT CTATCGCTAG CTCACTCAAT CAGACCATGA CCATCTTGGT     17880

CATCGTATCG GTTCTATTAG CTATTGTCAT CCTTTACAAT CTGACCAATA TCAACGTAGC     17940
```

```
TGAGAGAATC CGTGAACTCT CCACTATCAA GGTTCTTGGT TTTCATAATA ATGAAGTCAC    18000

CCTCTACATT TACCGTGAGA CGATTGTGCT GTCCCTTGTG GGAATCGTAC TTGGTCTGAT    18060

AGCTGGTTTC TATTTACACC AATTTTTGAT TCAAATGATT TCGCCTGCGA CTATTCTCTT    18120

TTATCCGCAG GTAGGCTGGG AAGTCTATGT AATCCCAGTG GCAGCAGTAA GCATCATTTT    18180

GACCTTGCTT GGTTTCTTCG TCAATTATTA TCTGAGAAAG GTTGATATGT TAGAAGCCCT    18240

GAAATCTGTA GAGTAAGGTA GTTATTTTTA GCTGATTGAA CTTCTATTTA CTAATATTCA    18300

AAAATCCTCC GTTTCAAAGA GCAGGGAACT CTTTGTGACA GAGGATTTTT TCTATAGGGC    18360

TTTAGCAGCT GCAATTGCGG CTTCGAAGTT TGGCTCAGAA TTGATATTAT CCACGTATTC    18420

AACGTAGCGA ATCGTATTGT CAGTATCGAG GACAAAGACT GCGCGTGCTA ATAGGTGCCA    18480

TTCGTTGATC AAGAGGGCAT AATCGCGCCC GAAAGAATGG TCAAAGTAGT CTGAAAGCAT    18540

AATGGCATTG TCAAGGCCTT CAGCACCGCA CCAACGTTTT TGAGCAAAAG GTAGGTCCAT    18600

TGAAACAGTC AATACGACCG TGTTGTCCAG TCCAGCCAAT TCTTCATTAA AACGACGTGT    18660

TTGAGTTGAG CAGATGCCTG TATCGATAGA AGGAACGACA CTCAAGACTT TTTTCTTGCC    18720

ATCAAAATCA GCCAGAGATT TTTTAGAAAG ATCTGTTGTA GTAAGAGAAA AATCAAGCGC    18780

CTTGTCGCCG ACTTGTAGTT GTTTACCTGT AAAGCTCACA GGATTCCGA GAAAAGTTAC     18840

CATAGGATAC TCCAATCTTT TTTCTTCCAT TTTAGCTGAA ACAGTCGGAA TTTTCCAATG    18900

ATTTCACCGG AAATATGGGC ATAGAAAAAA CGCCAGCTCA TGTGAGAATG ACGTTTTTCA    18960

TAGGTTTATT TTGCCAATCC TTCAGCAATC TTGTCAAGGT TGTATTTCAT CATGCTGTAG    19020

TAGCTGTCGC CTTCTTTACC TTGTTCTGCG ATAGAGTCAG TAAAGATTTG AGCGTAGATT    19080

GGGATGTTTG TGTCTTGAGA AACAGTTTTC ATTGGACGGT CATCCACACT TGATTCTACA    19140

AAGAGTGATG GAACTTTTGT TTGGCGAAGT TTTTCAACCA AGGTCTTGAT TTGTTCAGGA    19200

GTTCCTTCTT CTTCAGTATT GATTTCCCAG ATGTAAGCAC TTGGGACACC ATAGGCTTTA    19260

GAGAAGTATT TGAATGCTCC TTCGCTGGTT ACAATGAGTT TCTTTTCAGC AGGGATCTTA    19320

TTAAATTTAT CCTTACTTTC TTTATCAAGT TTGTCTAACT TATCAGTATA TTCTTTGAGA    19380

TTTTTTTCAT AGAATTCTTT ATTGTTAGGG TCTTTGGCGC TCAATTGTTT GGCGATATTT    19440

TTAGCAAAAA TAATACCGTT TTCAAGGTTA AGCCAAGCGT GTGGGTCTTC TTTTCCTTTT    19500

TCATTTTGAC CTTCAAGGTA GATAACATCA ACGCCGTCGC TGACTGCGAA GTAGTCTTTG    19560

TTTTCAGTTT TCTTGGCATT TTCTACCAAT TTTGTAAACC AAGCATTGCC ACCTGTTTCA    19620

AGGTTGATAC CGTTATAGAA AATCAAATTA GCCTCAGAAG TTTTCTTAAC GTCTTCAGGA    19680
```

370

```
AGTGGTTCGT ATTCGTGTGG GTCTTGCCCA ATCGGAACGA TACTATGAAG GTCAATTTTG   19740

TCACCAGCAA TATTTTTAGT AATATCAGCG ATGATTGAGT TTGTAGCAAC AACTTTTAGT   19800

TTTTGACCAG AAGTTGTATC TTTTTTTCCG CTAGCACATG CTACAAGAAT GATTGCAGAA   19860

AGAAAGAGAA CGAGTAATGT ACCTAATTTT TTCATTAGAT CCTCCAATTT ATTAGGGCTT   19920

TGCCCCTTAT TTTAACAAAT GTTTATTTTT CAGTTTCAAA TATCGTTGTT TGGGAGCGAT   19980

AAAGAAGCTA ATGAGAAAGA AACTAGCAGC TGTAAGCACG ATACTAGAAC CTGCCGCAAC   20040

ATTAAAACTA TAGCCAATAA AGAGTCCCAA AACTGAAGCA GTAGCTCCGA AGGTTGAGGA   20100

AAGGAAAATC ATACTTTTCA GACTATTAGC ATACAGATAA GCAGTTGCAG CTGGGGTAAT   20160

CAGCATGGCT ACAATCAGGA TAGTTCCGAC ACTTTGCATG GCTGTCACAG ACACGAGAGT   20220

CAGGAGTACC ATGAGAAGGT AGTGATAGAA ATTGACAGGC ATTCCCATGG CTTTAGCCAA   20280

GAGTTCATCA AAGGAAGTTA TCAAGAGTTG CTTGAAGAAA ATCCAGATTA ACAAGAGGAT   20340

AGCTGCCCCC ACACCCATAG TAATAAACAT ATCCGTATCT TGGACGGCCA GGATATTACC   20400

AAAAAGGATA TGGAAAAGGT CAGTTGAACT TTTAGCGACA CCAATCAAGA TGATACCGAG   20460

GGCTAAGAAA GAAGAAAAGG TAATGCCGAT GGCGGTATCG CTTTTGATAA TCGAGTTTCC   20520

TTTGATGTAG GTAATGATGA TGGCAGCTAG CAATCCAAAG ACAATGGCTC CGATAAAGAA   20580

GTCAAGGCCC AAGATGAAGG ATAGGGCTAC ACCTGGTAAG ACAGCATGTG AAATGGCATC   20640

TCCCATGAGT GACATCCCGC GTAGAATAAT GAAACATCCC ACAGCTCCAG CTACAATCCC   20700

GACGACAATA GCTGTTATCA AGGCATTTTG TAGGAAATGG AATTTTTGCA ATCCATCGAT   20760

AAATTCTGCA ATCATAGGTC ACCTCCATTG AAAAAGAGTT GATTACCGTA AGCTTCTTTT   20820

AGATTGGTTT CGGTAAAAGT TTCTTTTGTT GGACCAAAGG CAATCACTTC TCGATTGACA   20880

AGTAAGACTT GATCGAAGTA GTGGGGAATC TTGCTGAGGT CGTGGTGAAC GATGAGAACC   20940

GTCTTCCCAG CTTTTTTCAA ATCTCTCAGC GTATTCATGA TGATTCCTC ACTGACAGAG    21000

TCAATCCCAG CAAAGGGTTC ATCCAAGAGG ATATAGTCGG CTTCCTGCAC CAAACATCTG   21060

GCAATCAAGA CCCGCTGGAA TTGACCTCCA GACAGTTGAC TAATTTGACG TTCAGCGTAG   21120

TCAGCTAGGC CGACGATTTC AAGGGCCTCT TGCACTTTCT TCCAATGTTT AGCCTTTAAA   21180

CTTCGAAAGA GAGGAATAGA GGGAAATAGT CCTAACGAGA CGCATTCCTT GACCTTGATG   21240

GGAAAGTTGT AGTCGATATT GATTTTTTGT TCGACATAGG CAATTCGGTG TAAGGATTTT   21300

TTAACTTCCT TGTCATCGAG AAATGCCTGA CCTTGATGTG GGATAATTCC CAACATACCT   21360

TTTAATAGTG TTGATTTCCC AGCGCCGTTT GGACCAATGA TGCCGGTAAT TGTTGGTCCA   21420

TGGAGCACTA GTGAAATATC CTTAAGTGCC AACGTTTCTT TGTAGGAGAC ACTGAGGTTT   21480
```

371

```
TCGATACGTA TCATAAACTT GTATTCCTCC TGTCTCTTAA TATACATTAA AAAAAAAATT      21540

AAGTCAAGTT AATTTTTGAA AAAATTAAAA TAATAACTGA AAAATAGATT CTAAAGATAA      21600

CTTTCAGGAT AAATTTCTAA ATTATAAAAC GCATAGTATC AAGTGTAAAA AACTTGGAAT      21660

TATGCGTTTT ATCATGGAAA GATTTTTTAT AATAGCTAAA AAATAA                    21706
```

(2) INFORMATION FOR SEQ ID NO: 37:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 6171 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

```
GATCCCCAGG AAAAACCGAG GTTTTCCCAA TCAATCGTTA CTGTCATATT CCACTCCTTA        60

TTCTAAAAAC CTATTTCTTA TATTCTACAC TATTTTTCTA AAATAGCAAG TATATTTTGT       120

AATTTTCAGA AAATTTCTCC AATAAAAACC AACTCTTAGA ACTGATTCTT CATTTCACTT       180

ATTTATCTTC AGTAACTACT TCCTGAAGAT AAGCGTCAAA AACTTCTTCA TCTGAAATCG       240

TGTCAGAAAT GAAGCTTCCA TTGCTAGTGC GTTCTGACAA GTTCAAGTCT TGCAATCGGC       300

TTTCATAGAT TGTTCCTTTA TTGGATTGGA CAAGCAGAGT TTGGTCGTTC ACATCCACTT       360

CCGTACTCAA GAAATCGCCA ACAAATCCTT GCTCTGCAAC TGCTCCTGCC AAGAAGACAC       420

GATGCGGTTT GTTTTTCAAC TCACGCAAGA CTTGTAATCC TCGTTTGGCA CGGCTGGTTG       480

CTAGAATTTC CTCAATGGAA ACACGTTTCA AGCTTCCACG CTGGGTCAAG AGGTAGAAGG       540

ACGAAGTATT ACAGATAAAG CCAGATTGGA GGACATCATC TTCTTTCAAA TTCATAGCCT       600

TGACACCTGC TGCCTTAGCA CCGACAACCG GAACCTCTTC GATATTGAAA CGCAGGGCAT       660

AACCATTTTG ACTAACCAAG ACAACATCAT CTAGTTTAAT CGGAGCCACT GCTACAATCT       720

GATCTGTATC GTCTTTGAGC TTAGCATACT TGACAGACTT AGATCTATAG GTCCGCCATG       780

GAGTGAATTC TTTTCGCTCT ACCCGTTTGA TTTGACCAAG GCGAGTCACT GCAAAGTAGG       840

TTGTCGCATC GTCAAACTGA TCCAGTACTT CCACATAAAG GATTTCTTCA TTCGTTTCAA       900

AGTTTGTGAT GGTTTGGCTC AGATGCTCTC CGATGTCCTT CCAACGAATA TCTGCCAACT       960

CATGGATTGG TCTGTAGATG ACATTTCCAA GACTTGTGAA CATCAAGAGG TGCTGGGTTG      1020

TCTTGGCAGA TTGAACAAAA ATCAAACGGT CATCATCACG CTTGCCAATT TCTTCCAAGG      1080

TGGAAGCCGC AAAGGAACGT GGACTGGTAC GCTTGATGTA ACCTGCCTTG GTCACGCTGA      1140
```

372

```
CGTAGGTATC TTCCTCAGCG ATAAGACTAG CTGTATCAAT CTCAATTGCT TTCGCAGTGT    1200

CTTCTAAAGA ACTCAAACGA GGAGTTGCAA ATTTCTTCTT GACCTCACGA AGTTCTTTCT    1260

TCATGAGATT GTACATAGTC CTTTCATCAC CGATAATAGC CGCCAGCATA GCAATCTTCT    1320

CACGAAGCTC TGCTTCTTCT TCCTGCAAGA CAACCACATC GGTATTGGTC AAACGGTACA    1380

GTTGCAAAGT TACGATAGCC TCAGCCTGTT CTTCCGTAAA ATCATAGCTA ACTTTGAGGT    1440

TTTCCTTGGC GTCCGCCTTA TTCTCAGAAG CACGGATAAG AGCAATGACT TCATCCAAAA    1500

TCGAAATCAC ACGAATCAAA CCTTCGACGA TATGGAGACG TTTCTCAGCC TTTTCTTTGT    1560

CAAAGCGTGA ACGCGCCAAA ATCACTTCTC GACGGTGAGC GATATAGCTA GACAGGATTG    1620

GAACAATCCC AACCTGACGA GGTGTGAAAT TGTCAATCGC CACCATATTA AGTTGTAGT    1680

TGATTTGTAG GTCGGTGTAC TTAAATAAGT AGTTGAGAAC AAGCTCAGTA TTAGCGTCTT    1740

TCTTAAGTTC GATAGCGATA CGAAGACCAT CACGGTCAGA CTCATCACGA ACCTCAGCAA    1800

TCCCAGCTAC CTTGTTATTA ACACGAACAT CATCGATTTT CTTGACTAGA TTGGCCTTAT    1860

TGATTTCATA AGGAATCTCA ATAATAACGA TTTGTTCCTT ACCACCTTTT AGCTTTTCAA    1920

TTTCAGTCTT GGAACGAACA ACCACGCGCC CTTTCCCAGT CTCATAAGCT TTCTTGATTT    1980

CATCACGACC CTGAATAATA GCCCCTGTAG GGAAGTCTGG TCCAGGCAAG AATTCCATGA    2040

GTTTATCAAT CTTTGCAGTT GGGTGGTCAA TCATGTAAAC TGCAGCATCT ATGACCTCAG    2100

CTAAATTATG GGGAGGAATG TCTGTGGCAT AACCAGCCGA AATCCCAGTC GAACCATTGA    2160

CCAAGAGGTT TGGAAAGGCT GCTGGCAAGA CCGTTGGTTC TTTCTCCGTA TCGTCAAAGT    2220

TCCATGCAAA AGGAACTGTC TTTTTCTCGA TATCCTGAAG AAGGTAGCCT GCAATTTCAG    2280

ACAAACGTGC CTCAGTATAA CGCATAGCCG CAGGAGGATC TCCGTCCATA GAACCGTTAT    2340

TACCGTGCAT TTCAACTAGA ATCTCACGAT TTTTCCAGTT CTGTGACATA CGAACCATGG    2400

CATCATAGAT AGAAGAATCC CCGTGTGGGT GGAAATTCCC CATGATGTTC CCGACTGACT    2460

TGGCCGACTT ACGGTAGCTC TTGTCAAAAG TATTGCTATC CTTATTCATA GAATAAAGAA    2520

TACGGCGCTG AACCGGCTTC AACCCATCAC GAATATCTGG CAAAGCCCGG TCTTGAATAA    2580

TGTACTTGGA GTAGCGACCA AAGCGCTCTC CCATGATGTC CTCCAGGGAC ATGTTTTGAA    2640

TGTTAGACAT AAGATACAAA GCCCATAAAA TACCAAGTGA AAATAGAAAA TTCTTGAAGT    2700

AAGCAAACTC ACAAGAGAAT TTATCTTTTT CACACAGTAT CTAGGGCGTG TTCAACTCCT    2760

TTCAAAGAAT GTAGAGTAGG TTTTTATGCA GTAAAAGATA TTTTACGGGA ATTCCTCCCG    2820

TGTTCAGTTA CGATAAGTAA CCAAACTATC CTGTTTGTAT TTTTCAATAT GAAAATCTGG    2880

TTTTCCAAAA TTAGTCTTAG TTTGTGTCTT AGCCGCTCCC TTAAGCGCCT CTTTGAGATA    2940
```

373

```
AGCACTCATA GCAGATTCTT CATTAATAAT CCTGCAATTT TTTCAAACCA AGATTTTCAA    3000

ACTGCTTTTT CACATAGTCA TTCACATCCG ACTCTAATTT CCAGTTTACT AACATATTAT    3060

TTTCTTTCAT TAAAACACTG TCGTTTCTTC TAGCGTAAAC TTGACATTAT CTTCAATCCA    3120

TTTACGGCGT GGTTCTACCT TATCTCCCAT GAGAACATTG ACGCGGCGTT CGGCGCGCGC    3180

TAAATCTTCA ATTGTGACAC GGATGAGGGT ACGTGTTTCT GGGTTCATGG TTGTTTCCCA    3240

GAGCTGGTCC GCATTCATCT CACCAAGTCC TTTGTATCGT TGGAGGGTAG CGCCTTTACC    3300

GAACTGTTTA CGGAGTTCTT CTAGTTCTCC GTCCGTCCAA GCGTAGGCCA CTTCTTCTTT    3360

CTTGCCTTTA CCTTTGGACA TCTTGTAAAG AGGTGGGAGG GCAATATAGA CATGACCTGC    3420

CTCGACTAGC GGACGCATGT AACGGTAGAA AAATGTCAAG AGCAAGGTCT GGATATGGGC    3480

ACCGTCGGTA TCCGCATCGG TCATGATAAT GATCTTATCA TAGTTGGCAT CTTCAATAGA    3540

GAAGTCTGCT CCAACACCCG CACCAATGGT ATAAATCATG GTATTGATCT CTTCATTTTT    3600

GAGGATATCC GCCATCTTGG CCTTGGCTGT ATTGACAACC TTACCACGAA GAGGTAGAAT    3660

AGCCTGGAAC TTGCGGTCAC GACCTTGTTT GGCAGAACCA CCGGCAGAGT CCCCCTCAAC    3720

TAGATAGAGT TCATTCTTAG CAGGATTCTT AGATTGGGCT GGGGTCAATT TCCCAGACAA    3780

CAAGCCCTTA TCTTTCTTGT TTTTCTTCCC ATTTCGGCTC TCATCACGCG CCTTACGTGC    3840

TGCTTCACGA GCATCACGGG CCTTGATAGC CTTGCGGATG AGGTTAGAAG CTAATTCCCC    3900

ATTTTCCATA AGGAAAAAGG TCAACTTATC AGCCACTATT CCATCCACAA CTGGGCGAGC    3960

TAGGGGGCTT CCTAGTTTAT CCTTGGTCTG TCCTTCAAAC TGCAAGTGTT CTTCAGGAAC    4020

TAAGATAGAA AGAACGGCCG CTAGTCCCTC ACGATAGTCT GAACCTTCAA GGTTTTTATC    4080

TTTTTCCTTG AGAAGACCTG TTTTACGTGC ATAGTCATTC ATGACCTTGG TAATGGCAGA    4140

CTTGAGTCCT GTCTCGTGCG TTCCACCGTC CTTGGTGCGA ACGTTATTGA CAAAAGATAG    4200

AATGTTATCT GAGAATCCGT CATTGTACTG GAGGGCTACT TCCACTTGAA AACCATTGTC    4260

TTCCCCTTCA AAGTAAAGAA CTGGCGTCAA GATTTCCTTA TCTTCGTTGA GATAAGAAAC    4320

AAAATCTTGT ACTCCATTCT CATAGTGGAA CTCAATCGCT TCATTTGTTC GCTTGTCCGT    4380

TAAAGACAAG GTCACATTTT TCAAGAGAAA GGCTGATTCA TTAAGGCGCT CTGAAATGGT    4440

ATTGTACTTG AAATCTGTCG TAGAAAATAT AGTCGCGTCA GGCATAAAAG TAACTTTGGT    4500

GCCTGTTTTA GACTTGGGTG CTGTACCGAT TTTCTTCAAA GTCGTGACAG GTTTTCCACC    4560

ATTTTCGAAA CGTTGCTTGT AAACTGCGCC ATCACGGGTA ATTTCAACTT CTAACCAGCT    4620

AGAAAGGGCG TTAACAACGG AAGAACCCAC TCCGTGAAGT CCACCTGATG TCTTATAGCC    4680
```

374

```
ACCTTGACCG AATTTCCCTC CGGCATGAAG AATGGTAAAG ATAACCTCAA CAGTTGGAAT     4740

TCCCATAGCG TGCATACcTG TCGGCATCCC ACGTCCATGG TCTTGAACCG TTAGACTACC     4800

GTCTTTATTG ATAGTTACAT CAATACGATC ACCAAACCCA GACAAGGCTT CATCGACTGC     4860

ATTATCAACG ATTTCCCAAA CTAGGTGATG AAGACCAGCG CCATCGGTCG ATCCAATATA     4920

CATCCCTGGA CGTTTTCGGA CCGCATCCAA CCCTTCTAGC ACCTGAATAG CATCATCATT     4980

ATAATTGTTA ATATTGATTT CCTTTTTTGA CACAAGGAAC CTCCTATTCG TTCATCTTTA     5040

CTATTCTACA GGTTTTCCAA GGATTTTGCA AAATTTTTCT TTCTCCGATG TGACAATTTC     5100

AGCAGAGATT CTCTGCTTTT CTTTCCCAAT TCATGATATA ATAGGAGTAT GATTACAATA     5160

GTTTTATTAA TCCTAGCCTA TCTGCTGGGT TCGATTCCAT CTGGTCTCTG GATTGGACAA     5220

GTATTCTTTC AAATCAATCT ACGCGAGCAT GGTTCTGGTA ACACTGGAAC GACCAACACC     5280

TTCCGCATTT TAGGTAAGAA AGCTGGTATG GCAACCTTTG TGATTGACTT TTTCAAAGGA     5340

ACCCTAGCAA CGCTGCTTCC GATTATTTTT CATCTACAAG GCGTTTCTCC TCTCATCTTT     5400

GGACTTTTGG CTGTTATCGG CCATACCTTC CCTATCTTTG CAGGATTTAA AGGTGGTAAG     5460

GCTGTCGCAA CCAGTGCTGG AGTGATTTTC GGATTTGCGC CTATCTTCTG TCTCTACCTT     5520

GCGATTATCT TCTTTGGAGC TCTCTATCTT GGCAGTATGA TTTCACTGTC TAGTGTCACA     5580

GCATCGATTG CGGCTGTTAT CGGGGTTCTG CTCTTTCCAC TTTTTGGTTT TATCCTGAGT     5640

AACTATGACT CTCTCTTCAT CGCTATTATC TTAGCACTTG CTAGTTTGAT TATCATTCGT     5700

CATAAGGACA ATATAGCTCG TATCAAAAAT AAAACTGAAA ATTTGGTCCC TTGGGGATTG     5760

AACCTAACCC ATCAAGATCC TAAAAAATAA AATGCCAGTT CTGTACTGCC CCCAAACAGT     5820

TAGACAAATA ATTTATCCAA AGGATTTAGT TCTGTACTGC ACAGGACTAA GTCCTTTTAG     5880

TTTTACCTTA ATTCGTTTGT TGTTGTAGTA ATCAATATAG TCTATAATGG CTTGTTCCAA     5940

TTGATTAAGT GATTTAAATG TTTTCTCATA GCCATAAAAC ATTTCGGATT TTAAAATGCC     6000

AAAGAAAGAT TCCATCCTAC CGTTGTCTTG GCTGTTGCCC TTACGTGACA TGGATGCTTG     6060

AATTCCCTTA CTCTCTAGGA ACCGATGATA AGAATCGTGT TGGTATTGCC AGCCTTGGTC     6120

ACTATGGAGA ATCGTATTCT CGTAGTGCTT CTCTGTGAAT GCCTGTTCCA A              6171
```

(2) INFORMATION FOR SEQ ID NO: 38:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 18475 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

375

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

```
TATTACAAAT AAAAAAACGG AGGAGTGCTT TATGAAAGCC TATACTTATG TTAAACCAGG        60

ACTTGCTTCT TTTGTTGATG TAGACAAACC AGTTATTCGC AAGCCAACAG ACGCTATTGT       120

GCGTATTGTA AAAACCACTA TTTGTGGAAC AGACCTCCAT ATTATCAAAG GGGATGTTCC       180

TACTTGCCAA AGTGGTACCA TTCTTGGCCA CGAAGGGATT GGGATTGTTG AAGAAGTTGG       240

GGAAGGAGTT TCCAACTTCA AAAAAGGTGA CAAGGTCTTG ATTTCTTGCG TCTGTGCCTG       300

TGGTAAATGC TACTACTGTA AAAAAGGAAT TTATGCTCAC TGTGAAGACG AAGGGGGCTG       360

GATTTTCGGT CACTTGATTG ATGGTATGCA GGCTGAATAT CTACGTGTCC CTCATGCAGA       420

TAATACTCTT TACCATACTC CAGAAGACTT GTCAGATGAA GCTTTGGTTA TGCTGTCAGA       480

CATTCTGCCT ACTGGATATG AAATTGGTGT CTTAAAAGGG AAAGTAGAAC CTGGTTGCAG       540

CGTAGCCATT ATTGGTTCAG GTCCAGTTGG ATTGGCTGCT CTTTTAACAG CCCAATTCTA       600

TTCACCAGCT AAATTGATTA TGGTAGACCT AGACGATAAC CGCTTGGAAA CTGCCCTATC       660

ATTCGGTGCG ACTCATAAGG TTAATTCTTC AGACCCTGAA AAAGCCATTA AAGAAATTTA       720

TGATTTGACA GATGGTCGTG GTGTGGATGT CGCTATCGAA GCTGTTGGTA TTCCTGCAAC       780

ATTTGATTTC TGTCAAAAGA TTATCGGTGT AGACGGAACG GTTGCCAACT GTGGTGTGCA       840

TGGTAAACCA GTTGAATTCG ATTTAGATAA ACTTTGGATT CGCAACATCA ATGTAACAAC       900

TGGTTTGGTA TCTACAAATA CGACTCCACA ATTGTTGAAA GCACTTGAAA GTCATAAGAT       960

TGAACCGGAA AAATTGGTAA CTCACTATTT CAAACTCAGT GAAATTGAAA AAGCCTACGA      1020

AGTCTTCAGT AAGGCAGCAG ACCACCATGC CATTAAGGTC ATTATCGAAA ACGATATCTC      1080

AGAAGCCTAA GTAGTAAAAA TATTTTTGTA CATAAGTAAA TAGAAATTCA GTCATCCATC      1140

AGATGGCTGG ATTTTTTATC AAAAAATTAA GAAATGAGCA TATTTCTTTC CTTGTCTGGC      1200

GGAATTGGTT ATAATATACG GTACAAAGGA ATGAATGAAT ATGTATCGTG TTATAGAAAT      1260

GTACGGAGAT TTTGAACCGT GGTGGTTCTT AGAAGGTTGG GAAGAAGATA TTGTAGCAAG      1320

TAGAAAATTT GACCAGTATT ATGATGCTCT CAAATACTAC AAAACTTGCT GGTTTAGATT      1380

GGAACAAGAA TCGCCTCTTT ATAAAAGTAG AAGCGACTTG ATGACCATTT TTTGGGACCC      1440

GGAAGACCAA CGCTGGTGTG ATGAATGTGA TGAGTATTTA CAACAATACC ATTCTTTGGC      1500

TCTTTTGCAG GATGAGCAGG TTATCCCAGA CGAAAAACTA CGCTCAGGCT ATGAAAAACA      1560

AACCAGTCAG GAAAGGAATC GTTCTTGCCG TATGAAATTA AAATAGAGAA AAGTAACTTT      1620

TTTGGAGTTG CTTTTTTTAT TTTTCTAACT CTTTGCGAAT AGTATAGGTG AGGAGGTAAG      1680
```

376

```
TATGGTTCAA GAAATTGCAC AAGAAATCAT TCGTTCAGCT CGGAAAAAAG GGACGCAGGA    1740

TATCTATTTT GTCCCTAAGT TAGACGCCTA TGAGCTTCAT ATGAGGGTAG GAGACGAGCG    1800

CTGTAAAATT GGTAGCTATG ATTTTGAAAA GTTTGCAGCC GTTATCAGTC ACTTTAAGTT    1860

TGTGGCGGGT ATGAATGTGG GAGAAAAAAG ACGTAGTCAA CTGGGTTCCT GTGATTATGC    1920

CTATGACCAT AAGATAGCGT CTCTACGTTT ATCTACTGTA GGCGATTATC GGGGGCATGA    1980

GAGTTTGGTT ATCCGTTTGT TGCACGATGA GGAGCAGGAC CTGCATTTTT GGTTTCAGGA    2040

TATTGAAGAA TTAGGCAAGC AGTACAGGCA ACGGGGACTC TATCTTTTTG CTGGTCCGGT    2100

TGGGAGTGGT AAGACGACCT TGATGCATGA ATTGTCCAAG TCACTCTTTA AAGGACAGCA    2160

AGTTATGTCC ATCGAAGATC CTGTCGAAAT CAAGCAGGAC GACATGCTTC AGTTGCAGTT    2220

GAACGAAGCA ATCGGCCTAA CCTATGAAAA TCTAATCAAA CTTTCCTTGC GTCATCGACC    2280

AGATCTCTTG ATTATCGGAG AAATTCGTGA CAGCGAGACG GCGCGTGCAG TGGTCAGAGC    2340

TAGTTTGACA GGTGCGACAG TCTTTTCAAC CATTCACGCC AAGAGTATCC GAGGTGTTTA    2400

TGAGCGTCTG CTGGAGTTGG GTGTGAGTGA AGAAGAATTG GCAGTTGTTC TGCAAGGAGT    2460

CTGCTACCAG AGATTAATCG GGGGAGGAGG AATCGTTGAC TTTGCAAGCA GAGATTATCA    2520

AGAACACCAA GCAGCCAAGT GGAATGAGCA AATTGACCAG CTTCTTAAAG ATGGACATAT    2580

CACAAGTCTT CAGGCTGAGA CGGAAAAAAT TAGCTACAGC TAAGCAAAAA AATATCATCA    2640

CCCTATTTAA CAATCTCTTT TCTAGCGGTT TTCATCTGGT GGAGACTATC TCCTTTTTAG    2700

ATAGGAGTGC TTTGTTGGAC AAGCAGTGTG TGACCCAGAT GCGTGTGGGC TTGTCTCAGG    2760

GGAAATCATT CTCAGAAATG ATGGAAAGTT TGGGATGTTC AAGTGCTATT GTCACTCAGT    2820

TATCCCTAGC TGAAGTTCAT GGCAATCTCC ACCTGAGTTT GGGAAAGATA GAAGAATATC    2880

TGGACAATCT GGCTAAGGTC AAGAAAAAAT TGATTGAAGT AGCGACCTAT CCCTTGATTT    2940

TGCTGGGTTT TCTTCTCTTA ATTATGCTGG GGCTACGGAA TTACCTGCTC CCACAACTGG    3000

ATAGTAGCAA TATTGCCACC CAAATTATCG GTAATCTGCC CCAAATTTTT CTAGGCATGG    3060

TAGGGCTTGT TTCCGTGCTT GCCCTTTTAG CACTCACTTT TTATAAAAGA AGTTCTAAGA    3120

TGAGTGTCTT TTCTATCTTA GCACGCCTTC CCTTTATTGG AATCTTTGTG CAGACCTACT    3180

TGACAGCCTA TTATGCACGT GAATGGGGGA ATATGATTTC ACAGGGAATG GAGTTGACGC    3240

AGATTTTTCA AATGATGCAG GAACAAGGTT CCCAGCTCTT TAAAGAAGTC GGTCAAGATC    3300

TGGCTCAAAC CCTGAAAAAT GGCCGTGAAT TTTCTCAGAC GATAGGAACC TATCCTTTCT    3360

TTAGGAAGGA ATTGAGTCTC ATCATAGAGT ATGGGGAAGT TAAGTCCAAG CTGGGTAGTG    3420

AGTTGGAAAT CTATGCTGAA AAAACTTGGG AAGCCTTTTT TACCCGAGTC AACCGCACCA    3480
```

377

```
TGAATTTGGT GCAGCCACTG GTTTTTATCT TTGTGGCACT GATTATCGTT TTACTTTATG        3540

CGGCAATGCT CATGCCCATG TATCAAAATA TGGAGGTAAA TTTTTAAAAT GAAAAAAATG        3600

ATGACATTCT TGAAAAAAGC TAAGGTTAAA GCTTTTACAT TGGTGGAGAT GTTGGTGGTC        3660

TTGCTGATTA TCAGCGTGCT TTTCTTGCTC TTTGTACCTA ATCTGACCAA GCAAAAAGAA        3720

GCAGTCAATG ACAAAGGAAA AGCAGCTGTT GTTAAGGTGG TGGAAAGCCA GGCAGAACTT        3780

TATAGCTTAG AAAAGAATGA AGATGCTAGC CTAAGAAAGT TACAAGCAGA TGGACGCATC        3840

ACGGAAGAAC AGGCTAAAGC TTATAAAGAA TACAATGATA AAAATGGAGG AGCAAATCGT        3900

AAAGTCAATG ATTAAGGCCT TTACCATGCT GGAAAGTCTC TTGGTTTTGG GACTTGTGAG        3960

TATCCTTGCC TTGGGCTTGT CCGGCTCTGT CCAGTCCACT TTTTCAGCGG TAGAGGAACA        4020

GATTTTCTTT ATGGAGTTTG AAGAACTCTA TCGGGAAACC CAAAAACGCA GTGTAGCCAG        4080

TCAGCAAAAG ACTAGTCTGA ACTTAGATGG GCAGACGCTT AGCAATGGCA GTCAAAAGTT        4140

GCCAGTCCCT AAAGGAATTC AGGCCCCATC AGGCCAAAGT ATTACATTTG ACCGAGCTGG        4200

GGGCAATTCG TCCCTGGCTA AGGTTGAATT TCAGACCAGT AAAGGAGCGA TTCGCTATCA        4260

ATTATATCTA GGAAATGGAA AAATTAAACG CATTAAGGAA ACAAAAAATT AGGGCAGTGA        4320

TTTTACTGGA AGCAGTAGTC GCTCTAGCTA TCTTTGCCAG CATTGCGACC CTCCTTTTGG        4380

GACAAATTCA AAAAAATAGG CAAGAGGAAG CAAAAATCTT GCAAAAGGAA GAAGTCTTGA        4440

GGCTAGCTAA GATGGCCCTG CAGACGGGGC AAAATCAGGT AAGCATCAAC GGAGTTGAGA        4500

TTCAGGTATT TTCTAGTGAA AAAGGATTGG AGGTCTACCA TGGTTCAGAA CAGTTGTTGG        4560

CAATCAAAGA GCCATAAGGT CAAGGCTTTT ACCTTGTTAG AATCCCTGCT TGCCCTCATT        4620

GTCATCAGTG GGGGATTACT CCTTTTTCAA GCTATGAGTC AGCTCCTCAT TTCAGAAGTT        4680

CGCTACCAGC AACAAAGCGA GCAAAAGGAG TGGCTCTTGT TTGTGGACCA ACTTGAGGTA        4740

GAATTAGACC GTTCGCAGTT CGAAAAAGTA GAAGGCAATC GCCTATACAT GAAGCAAGAT        4800

GGCAAGGACA TCGCCATCGG TAAGTCAAAG TCAGATGATT TCCGTAAAAC GAATGCTCGT        4860

GGTCGAGGTT ATCAGCCTAT GGTTTATGGA CTCAAATCTG TACGGATTAC AGAGGACAAT        4920

CAACTGGTTC GCTTTCATTT CCAGTTCCAA AAAGGCTTAG AAAGGGAGTT CATCTATCGT        4980

GTGGAAAAAG AAAAAAGTTA AGGCAGGTGT TCTCCTCTAC GCAGTCACCA TAGCAGCCAT        5040

CTTTAGTCTT TTGTTGCAAT TTTATTTGAA CCGACAAGTC GCCCACTATC AAGACTATGC        5100

TTTGAATAAA GAAAAATTGG TTGCTTTTGC TATGGCTAAA CGAACCAAAG ATAAGGTTGA        5160

GCAAGAAAGT GGGGAACAGT TTTTTAATCT AGGTCAGGTA AGCTATCAAA ACAAGAAAAC        5220
```

378

```
TGGCTTAGTG ACGAGGGTTC GTACGGATAA GAGCCAATAT GAGTTTCTGT TTCCTTCAGT      5280

CAAAATCAAA GAAGAGAAAA GAGATAAAAA GGAAGAGGTA GCGACCGATT CAAGCGAAAA      5340

AGTGGAGAAG AAAAAATCAG AAGAGAAGCC TGAAAAGAAA GAGAATTCAT AGTCAATTCA      5400

ACTATAATGC GTTGAATCCA GAATAGTCCA CTGTAGTTTC TAGAAAATTG CTGGAAATGG      5460

ATGTTAAGCT CCAATTCATT TGTTTATATC TTATTTCAGT TTACTATACT TTGTGCTAAA      5520

TTAAAGATAT GAAACATGAT TTTAACCACA AAGCAGAAAC TTTCGATTCC CCTAAAAATA      5580

TCTTCCTCGC AAACTTGGTA TGTCAAGCAG CCGAGAAACA GATTGATCTT CTATCAGACA      5640

AAGAAATTTT AGATTTCGGT GGTGGCACGG GTCTATTAGC CTTGCCCCTA ACCCCTAGCC      5700

AAGCAGGCTA AGTCAGTCAC TCTTGTAGAC ATTTCTGAGA AAATGTTGGA GCAAGCTCGT      5760

TTGAAAGTGG AGCAGCAAGC AATCAAGAAT ATCCAGTTTT TGGAGCAAGA TTTACCGAAA      5820

AATCCCTTGG AGAAAGAGTT TGATTGCCTT GCTGTTAGTC GGGTTCTTCA TCATATGCCT      5880

GATTTGGATG CGGCTCTCTC ACTGTTTCAT CAACATTTGA AGGAAGATGG GAAACTCATC      5940

ATTGCTGATT TTACCAAGAC AGAAGCTAAT CATCATGGAT TTGATTTAGC TGAACTGGAA      6000

AACAAGCTAA TTGAGCATGG TTTTTCATCT GTGCATAGTC AGATTCTCTA TAGTGCTGAA      6060

GACCTGTTTC AAGGAAATCA CTCAGAATTC TTTTTAATAG TAGCCCAAAA ATCACTCGCC      6120

TAGTCAGGGA GTGATTTTTC TATAAGGATG GAAAAAAGAA GGGAAATTTG GTAAGATAGG      6180

AATATGGATT TTGAAAAAAT TGAACAAGCT TATACCTATT TACTAGAGAA TGTCCAAGTC      6240

ATCCAAAGTG ATTTGGCGAC CAACTTTTAT GACGCCTTGG TGGAGCAAAA TAGCATCTAT      6300

CTGGATGGTG AAACTGAGCT AAACCAGGTC AAGGAGAACA ATCAAACCCT TAAGCGTTTA      6360

GCACTACGCA AAGAAGAATG GCTCAAGACC TACCAGTTTC TCTTGATGAA GGCTGGGCAA      6420

ACAGAACCCT TGCAGGCCAA TCACCAGTTT ACACCGGATG CTATTGCTTT GCTTTTGGTG      6480

TTTATTGTGG AAGAGTTGTT TAAAGAGGAG GAAATTACTA TCCTCGAAAT GGGTTCTGGG      6540

ATGGGAATTC TAGGCGCTAT TTTCTTGACC TCGCTTACTA AAAAGGTGGA TTACTTGGGA      6600

ATGGAAGTGG ATGATTTGCT GATTGATCTG GCAGCTAGCA TGGCAGATGT AATTGGTTTG      6660

CAGGCTGGCT TTGTCCAAGG AGATGCCGTT CGCCCACAAA TGCTCAAAGA AAGCGATGTG      6720

GTCATCAGTG ACTTGCCTGT CGGCTATTAT CCTGATGATG CCGTTGCGTC GCGCCATCAA      6780

GTTGCTTCTA GCCAAGAACA TACTTACGCC CATCACTTGC TCATGGAACA AGGGCTTAAG      6840

TACCTCAAGT CAGACGGATA CGCTATTTTT CTAGCTCCGA GTGATTTGTT GACCAGTCCT      6900

CAAAGTGATT TGTTAAAAGA ATGGCTGAAA GAAGAGGCGA GTCTGGTTGC TATGATTAGT      6960

CTGCCTGAAA ATCTCTTTGC TAATGCCAAA CAATCTAAGA CTATTTTTAT CTTACAGAAG      7020
```

```
AAAAATGAAA TAGCAGTAGA GCCTTTTGTT TATCCACTTG CTAGCTTGCA AGATGCAAGT    7080

GTTTTAATGA AATTTAAAGA AAATTTTCAA AAATGGACTC AAGGTACTGA AATATAAAAT    7140

AGATTTTGTT ATAATAGTTG AAAACGCTTA AAAAGGGGTA TCATGTTATG ACAAAAACAA    7200

TTGCAATCAA TGCAGGAAGT TCAAGTTTGA AATGGCAATT ATACTTAATG CCAGAAGAAA    7260

AAGTATTGGC GAAAGGTTTG ATTGAACGTA TCGGTTTGAA AGATTCAATT TCAACTGTAA    7320

AATTTGACGG CCGTTCTGAA CAACAAATTT TGGATATTGA AAATCATATA CAAGCCGTTA    7380

AAATTTTATT GGATGACTTG ATTCGTTTCG ATATTATCAA GGCTTATGAC GAGATTACAG    7440

GTGTTGGACA TCGTGTTGTT GCTGGTGGAG AATATTTCAA AGAATCAACA GTTGTTGAGG    7500

GAGATGTTTT AGAAAAAGTT GAAGAGTTGA GTTTGTTGGC TCCTCTACAC AACCCGGCCA    7560

ATGCAGCAGG TGTTCGTGCC TTCAAGGAAT TGTTGCCAGA CATTACCAGT GTAGTTGTTT    7620

TTGATACTTC CTTCCACACA AGTATGCCAG AGAAAGCTTA TCGCTACCCT CTACCAACAA    7680

AATATTACAC AGAAAACAAG GTTCGTAAAT ACGGTGCTCA TGGTACAAGT CACCAGTTTG    7740

TAGCAGGAGA AGCTGCAAAA CTCTTGGGAC GTCCATTAGA AGACTTGAAG TTAATTACCT    7800

GTCATATTGG TAACGGAGGC TCAATTACAG CTGTGAAAGC CGGCAAATCT GTAGACACTT    7860

CTATGGGGTT CACTCCTCTT GGTGGTATTA TGATGGGAAC GCGTACAGGG GATATTGATC    7920

CAGCTATCAT TCCTTATTTA ATGCAATATA CAGAGGATTT TAACACACCA GAAGATATCA    7980

GTCGTGTTCT TAACCGTGAA TCAGGTCTTT TGGGAGTTTC TGCTAATTCT AGCGATATGC    8040

GCGATATAGA AGCAGCTGTA GCAGAAGGGA ATCACGAGGC TAGCTTGGCT TATGAAATGT    8100

ATGTTGACCG TATCCAAAAA CATATCGGTC AGTACCTTGC AGTGCTAAAT GGAGCAGATG    8160

CCATTGTTTT CACAGCAGGT GTCGGTGAAA ATGCAGAGAG TTTCCGTCGT GATGTAATCT    8220

CAGGGATTTC GTGGTTTGGT TGTGATGTTG ATGATGAAAA GAATGTCTTT GGCGTTACAG    8280

GAGACATCTC AACAGAGGCA GCTAAAATCC GTGTCTTGGT TATTCCAACA GATGAAGAAT    8340

TAGTCATTGC CCGTGACGTT GAACGCTTGA AAAAATAAGT GAAACTAAAA AAATATTCAA    8400

TACAAGGAGT TGGGAAAGTT ATTTTTCCAG CTTCTTTTTC TGATGAAATT GTCCAAAACC    8460

TTGCTATGAT TGGCTTTTTT GAAAAATATG GTATAATAGT AGTAATTTAA TAGATGGAGT    8520

TGAGTTTTGA AGAAAAACTT TCGTGTAAAA AGAGAGAAAG ATTTTAAGGC GATTTTCAAG    8580

GAGGGGACAA GTTTTGCTAA TCGCAAATTT GTGGTCTACC AATTAGAAAA CCAGAAAAAC    8640

CGTTTTCGAG TAGGTCTATC AGTTAGCAAA AAACTGGGGA ATGCCGTCAC TAGAAATCAA    8700

ATTAAGCGAC GGATTCGGCA TATTATCCAG AATGCAAAAG GGAGTCTGGT AGAAGATGTC    8760
```

380

```
GACTTTGTTG TCATTGCTCG AAAAGGAGTC GAAACCTTGG GATACGCAGA GATGGAGAAA          8820

AATCTACTCC ATGTATTAAA ATTATCAAAG ATTTACCGGG AAGGAAATGG GAGTGAAAAA          8880

GAAACTAAAG TTGACTAGTT TGCTAGGACT GTCTCTGTTA ATCATGACAG CCTGTGCGAC          8940

TAATGGGGTA ACTAGCGATA TTACAGCCGA ATCGGCTGAT TTTTGGAGTA AATTGGTTTA          9000

CTTCTTTGCG GAAATCATTC GCTTTTTATC GTTTGATATT AGTATCGGAG TGGGGATTAT          9060

TCTCTTTACG GTCTTGATTC GTACAGTCCT CTTGCCAGTC TTTCAGGTGC AAATGGTGGC          9120

TTCTAGGAAA ATGCAGGAAG CTCAGCCACG CATTAAGGCG CTTCGAGAAC AATATCCAGG          9180

TCGAGATATG GAAAGCAGAA CCAAACTAGA GCAGGAAATG CGTAAAGTAT TTAAAGAAAT          9240

GGGTGTCAGA CAGTCAGACT CTCTTTGGCC GATTTTGATT CAGATGCCGG TTATTTTGGC          9300

CCTGTTCCAA GCCCTATCAA GAGTTGACTT TTTAAAGACA GGTCATTTCT TATGGATTAA          9360

CCTTGGTAGT GTGGATACAA CCCTTGTTCT TCCGATTTTA GCAGCAGTAT TCACCTTTTT          9420

AAGTACTTGG TTGTCCAACA AAGCTTTGTC TGAGCGAAAT GGCGCTACGA CTGCGATGAT          9480

GTATGGGATT CCAGTCTTGA TTTTTATCTT TGCAGTTTAT GCGCCAGGTG GAGTCGCCCT          9540

ATACTGGACA GTGTCTAATG CTTATCAAGT CTTGCAAACC TATTTCTTGA ATAATCCATT          9600

CAAGATTATC GCAGAGCGCG AGGCCGTAGT ACAGGCACAA AAAGATTTGG AAAATAGAAA          9660

AAGAAAAGCC AAGAAAAAGG CTCAGAAAAC GAAATAAATA AGGAGGAATC TGGTAGTGGT          9720

AGTATTTACA GGTTCAACTG TTGAAGAAGC AATCCAGAAA GGATTGAAAG AATTAGATAT          9780

TCCAAGAATG AAGGCTCATA TCAAAGTCAT TTCTAGGGAG AAAAAAGGCT TTCTTGGTCT          9840

ATTTGGTAAA AAACCAGCCC AAGTGGATAT TGAAGCGATT AGTGAAACGA CTGTTGTCAA          9900

AGCAAATCAA CAGGTAGTAA AAGGCGTTCC GAAAAAAATC AATGATTTGA ACGAGCCTGT          9960

GAAGACGGTT AGTGAAGAAA CCGTTGACCT TGGTCATGTG GTTGATGCTA TTAAAAAAAT         10020

AGAGGAAGAA GGTCAAGGTA TTTCTGATGA AGTCAAGGCT GAAATCTTAA AACATGAAAG         10080

ACATGCCAGC ACTATCTTAG AAGAAACTGG TCACATTGAG ATTTTAAATG AACTTCAAAT         10140

CGAGGAAGCG ATGAGGGAAG AAGCAGGCGC TGATGACCTT GAAACTGAGC AAGACCAAGC         10200

TGAAAGTCAA GAACTAGAAG ACTTGGGCTT GAAAGTTGAA ACGAACTTTG ATATTGAACA         10260

AGTAGCTACG GAAGTAATGG CTTATGTTCA AACGATTATT GATGACATGG ATGTTGAGGC         10320

TACACTTTCA AATGATTATA ACCGTCGTAG CATCAATCTA CAAATTGACA CCAACGAACC         10380

AGGTCGTATT ATCGGCTACC ATGGTAAAGT CTTGAAGGCC TTGCAACTGT TGGCTCAAAA         10440

TTATCTTTAC AACCGCTATT CCAGAACCTT CTACGTTACA ATCAATGTCA ATGATTATGT         10500

CGAACACCGT GCAGAAGTCT TGCAGACCTA TGCGCAAAAA TTGGCGACTC GTGTTTTGGA         10560
```

381

```
AGAAGGGCGC AGTCATAAAA CAGATCCAAT GTCAAATAGC GAACGCAAGA TTATCCATCG    10620

TATTATTTCA CGTATGGATG GCGTGACTAG TTACTCTGAA GGTGATGAGC CAAATCGCTA    10680

TGTTGTTGTA GATACAGAAT AAGTAAAATC AGGTTTATCC TGATTTTTTG CTAGTTAGAG    10740

GAGGTTAAAC TGATGTTGAA TAAGATAAGA GACTATTTAG ACTTTGCTGG TTTGCAGTAC    10800

CGTAATCCTG ATAAAGCGGG AGCAGAGCGA GAGAAGATGC TGGCATTCCG CCACAAAGGA    10860

CAAGAGGCCC GAAAGGTTTT TACAGAACTG GCCAAAGCCT TTCAAGCAAG CCATCCAGAA    10920

TGGCAACTCC AACAGACTAG CCAGTGGATG AATCAGGCCC AGCGTTTGAG ACCACATTTT    10980

TGGGTTTATC TACAGAGAGA CGGACAAGTG ACAGAACCTA TGATGGCCTT ACGTTTGTAT    11040

GGGACATCTA CTGACTTTGG AATTTCTTTG GAAGTCAGTT TCATCGAACG TAAGAAGGAT    11100

GAGCAAACAC TGGGCAAGCA GGCCAAAGTT TTAGACATTC CAACCGTTAA AGGGATTTAT    11160

TATCTAACCT ACTCTAATGG TCAAAGTCAA CGGTGGGAGG CGAATGAAGA AAAGCGTCGT    11220

ACTTTACGCG AGAAGGTGAG AAGTCAAGAA GTTCGAAAAG TTTTAGTGAA GGTAGATGTT    11280

CCTATGACAG AAAAATTCGTC TGAAGAAGAA ATCGTAGAAG GCTTATTGAA GTCTTATTCT    11340

AAAATTCTTC CCTATTATCT AGCTACGAGA AAATAAGATA ATTTGTAAAA CATCATAAAT    11400

CATACAGTCC AAGAGTGAAC AGTCCGCTGT GTAATTCTTG GTCTTTTTGT TTGCGCTTTC    11460

GCATTATATA ATAAACTTAC AAAAACAATT CAAAAGGAGA ACAATTATGG AAGTCGTTTC    11520

AAGTGTTCTA AATTGGTTTT CTAGCAATAT TTTGCAGAAT CCCGCATTTT TCGTAGGTTT    11580

ATTGGTGTTG ATAGGATATG CACTTTTGAA AAAACCTGCC CATGACGTTT TTTCAGGGTT    11640

TGTTAAAGCA ACAGTAGGGT ATATGTTGCT TAACGTGGGT GCTGGTGGTT TGGTTACAAC    11700

CTTTCGTCCA ATCTTAGCAG CTCTTAACTA CAAATTCCAA ATTGGTGCAG CGGTTATCGA    11760

CCCTTACTTT GGACTTGCTG CAGCAAACAA CAAAATTGTA GCAGAGTTTC CAGATTTTGT    11820

TGGAACTGCA ACTACAGCTC TATTGATTGG TTTTGGAATA AATATCTTGC TCGTAGCTCT    11880

TCGAAAGATT ACGAAGGTAA GAACCCTCTT TATTACTGGT CACATCATGG TACAACAAGC    11940

TGCAACAGTA TCTCTTATGG TTCTATTCTT AGTACCACAA TTGCGCAATG CTTACGGTAC    12000

AGCAGCGATT GGTATCATCT GTGGACTTTA CTGGGCAGTT AGTTCAAATA TGACTGTTGA    12060

GGCAACTCAA CGCTTGACTG GTGGTGGCGG ATTTGCGATT GGTCACCAAC AGCAATTTGC    12120

AATCTGGTTT GTAGATAAAG TAGCAGGACG CTTTGGTAAG AAAGAAGAAA GTTTAGACAA    12180

TCTTAAATTA CCTAAGTTCC TCTCAATCTT CCACGATACA GTTGTTGCAT CTGCTACCTT    12240

GATGCTCGTA TTCTTCGGAG CCATTCTTTT AATCTTGGGT CCAGACATTA TGTCTAATAA    12300
```

382

```
AGAAGTCATC ACTTCAGGAA CTCTATTCAA TCCTGCTAAA CAAGATTTCT TTATGTACAT    12360

TATCCAAACA GCCTTTACCT TCTCAGTTTA CTTGTTCGTT TTGATGCAAG GTGTCCGAAT    12420

GTTCGTATCT GAGTTGACAA ACGCCTTCCA AGGTATTTCA AACAAATTGT TGCCAGGTTC    12480

ATTCCCAGCG GTTGACGTTG CAGCTTCTTA TGGATTTGGT TCTCCAAATG CTGTCTTGTC    12540

AGGATTTACC TTTGGTTTGA TTGGTCAATT GATTACAATT GTTTTGCTCA TCGTCTTTAA    12600

AAATCCGATT CTTATTATTA CAGGATTTGT ACCAGTGTTC TTTGACAATG CAGCCATTGC    12660

GGTCTACGCT GATAAACGCG GCGGATGGAA AGCGGCTGTT ATCCTTTCCT TTATATCAGG    12720

TGTCCTTCAA GTTGCTCTAG GAGCTCTTTG TGTGGCCCTT CTCGATTTGG CATCTTATGG    12780

TGGCTACCAT GGAAATATCG ACTTTGAATT CCCATGGCTT GGATTTGGAT ATATCTTCAA    12840

ATACCTTGGT ATTGTTGGTT ATGTACTTGT GTGTCTCTTC TTGCTTGTTA TTCCTCAACT    12900

TCAATTTGCC AAAGCAAAAG ATAAAGAGAA ATATTACAAC GGTGAAGTTC AAGAAGAAGC    12960

TTAGTATCTA GAAAAGGAGA AATAAAATGG TTAAAGTATT AGCAGCGTGC GGAAATGGAA    13020

TGGGTTCATC AATGGTTATC AAGATGAAGG TTGAAAATGC TCTCCGTAAG CTTAATCAAA    13080

CAGATTTTAC AGTCAATTCA TGCAGTGTCG GTGAAGCTAA AGGTTTAGCA GTAGGATATG    13140

ACATCGTAAT CGCTTCTCTT CATTTGATTC AAGAATTGGA AGGGCGAACT AATGGGAAGT    13200

TAATTGGGCT TGATAACTTG ATGGATGATA AAGAAATCAC CGAAAAACTC AGTCAAGCAC    13260

TACAGTAAAA GGTTGGAGGG GGCTGGACAG AAACTGAGAG TTATCGTTTC TGTCCTTCTC    13320

CCTCTTTAAA TAAAGGAGGC AGATATGAAT TTAAAACAAG CTTTAATTGA CAATGACTCG    13380

ATCCGACTAG GTTTAGAGGC TAACAATTGG AAAGAAGCAG TCAAGGTAGC AGTAGATCCC    13440

TTAATTGAAA GTGGGGCAAT TTTGCCAGAG TATTACGATG CTATCATTGA ATCGACTGAA    13500

GAGTATGGGC CTTACTATAT CTTGATGCCA GGTATGGCTA TGCCCCACGC TAGACCTGAA    13560

GCAGGTGTGC AAAGTGATGC CTTTTCATTG ATTACCTTAC AAAATCCTGT TGTATTTTCA    13620

GATGGGAAAG AGGTATCTGT TTTGTTGGCA CTAGCAGCAA CAAGTTCAAA AATTCACACA    13680

AGTGTAGCCA TTCCACAAAT TATTGCCCTA TTTGAATTAG AAGATTCTAT TGCACGTTTA    13740

CAGGCTTGCC AGACTAAAGA AGATGTCTTG GCTATGATTG AAGAATCTAA GGATAGCCCT    13800

TATCTCGAAG GATTGGATTT GGAAAGTTAG AAAGAGGAAT AAAGAAATGA CAAAAAGAAT    13860

ACCTAATTTA CAAGTTGCAT TAGACCATTC AGACTTGCAA GGAGCGATTA AAGCAGCTGT    13920

TTCTGTTGGT CAGGAAGTAG ATATTATCGA AGCTGGAACT GTTTGCTTGC TTCAAGTTGG    13980

AAGTGAACTG GCTGAAGTCT TGCGTAGCCT TTTCCCAGAT AAGATTATTG TGGCAGACAC    14040

AAAATGTGCT GATGCTGGTG AACAGTTGC TAAAAATAAT GCGGTTCGTG GAGCAGACTG    14100
```

383

```
GATGACTTGT ATCTGTTGTG CAACCATCCC TACTATGGAA GCAGCTCTAA AGGCTATCAA    14160

GACTGAACGA GGAGAACGAG GCGAAATCCA GATCGAGCTT TATGGCGATT GGACTTTTGA    14220

ACAAGCTCAG CTTTGGCTAG ATGCAGGTAT CTCACAAGCT ATTTATCACC AATCTCGTGA    14280

TGCTCTTCTT GCTGGTGAAA CTTGGGGTGA AAAAGACCTT AATAAGGTTA AAAAACTCAT    14340

TGACATGGGC TTCCGTGTAT CTGTAACAGG TGGTCTAGAT GTAGATACTC TCAAACTCTT    14400

TGAAGGTATT GATGTCTTTA CCTTTATCGC AGGTCGTGGA ATTACAGAGG CTGTGGATCC    14460

AGCAGGAGCA GCGCGTGCCT TCAAGGATGA AATCAAACGA ATTTGGGGGT AAATCATGGT    14520

ACGTCCAATT GGAATTTATG AAAAGGCAAC CCCAACACAC TGTACTTGGC TAGAACGTTT    14580

AAATTTTGCC AAGGAGTTAG GCTTTGATTT TGTCGAGATG TCTATTGACG AACGTGACGA    14640

GCGTTTAGCA AGACTTGACT GGAGTAAGGA AGAACGCTTG GAAGTTGTCA AAGCAATCTA    14700

TGAAACTGGT GTTCGTATTC CTTCTATCTG TTTTTCAGGC CATCGTCGCT ACCCATTGGG    14760

TTCAAAAGAT CCAGTTCTAG AGGAAAAATC TCTAGAACTC ATGAAAAAAT GTATCGAATT    14820

AGCTCAAGAC TTGGGAGTTC GTACGATTCA ATTAGCTGGT TACGATGTTT ACTATGAGGA    14880

AAAGTCACCC CAGACACGCC AACGTTTTAT CAAAAATTTG AGAAAAGCCT GTGACTGGGC    14940

TGAAGAAGCT CAGGTGGTAC TTGCTATTGA AATTATGGAT GATCCTTTCA TCAGTAGCAT    15000

CGAAAAATAT TTGGCTATAG AAAAAGAGAT TGACTCTCCC TTCCTCTTTG TATATCCAGA    15060

TATTGGTAAT GTGTCTGCAT CGCATAATGA TATCTATAGT GAGTTTTATC TTGGTCATCA    15120

TGCCATCGCA GCTCTCCATC TCAAGGATAC TTATGCAGTG ACAGAAAGTT CAAAGGGCCA    15180

GTTCCGAGAT GTACCTTTCG GGCAAGGTTG TGTCAAATGG GAAGAAGCTT TCGATATTTT    15240

AAAGGAAACC AATTATAATG GACCTTTCCT AATCGAAATG TGGTCTGAAA ATTGTGAAAC    15300

AGTAGAAGAA ACACGCGCAG CCATTCAAGA GGCGCAAGCT TTTCTCTATC CACTCATTAA    15360

GAAAGCAGGT TTGATGTAAG ATGAATCAAG TAATCAATGC TATGCGTAAA CGAGTCTGTG    15420

ATGCCAATCA ATCATTGCCA AAACATGGAC TTGTCAAATT TACCTGGGGG AATGTATCTG    15480

AAGTTAATCG CGAACTCGGT GTCATTGTTA TCAAACCATC AGGCGTGGAT TATGACGAAT    15540

TGACACCTGA AAACATGGTA GTGACTGATC TAGATGGTAA GATCCTAGAA GGGGATTTAA    15600

GACCATCTTC CGACCTCCCA ACTCATGTGC AATTATATAA GACTTGGTCA GAAATTGGTA    15660

GTGTGGTTCA CACCCATTCG ACAGAAGCTG TTGGTTGGGC TCAGGCAGGT CGTGATATTC    15720

CTTTCTACGG AACAACCCAT GCAGATTATT TCTACGGTTC AATCCCTTGC GCCCGTAGTT    15780

TGACCAAGGA CGAAGTAGAA GTGGCCTATG AAAAAGATAC TGGCCTGGTT ATCGTAGAAG    15840
```

384

```
AGTTTGAACA TCGCGGACTT AACCCGGTTG AAGTACCAGG AATTGTTGTA CGCAATCACG      15900

GTCCATTCAC CTGGGGCAAA AATCCAGAGA ATGCTGTTTA TCACTCTGTC GTACTAGAGG      15960

AAGTATCAAA GATGAATCGC TTTACAGAAC AAATCAATCC AAGAGTTGGA CCTGCTCCCC      16020

AGTACATACT AGAAAAACAC TACCAACGTA AACATGGACC AAATGCTTAT TATGGTCAAA      16080

AGTAAGAACG ATGAAGGAGG AGAAAAAGAT AAATTTAGCT CCTCTTTTTA CATTTGATTT      16140

TTATTGAGAG TAAAGTTGGA GTTGAAGTAA TTTTAAAAGA TTTTTTAGAA ATAGCGCTTG      16200

ATATATATAT GGTAAAATAA AAAGAATTGC TGTGATATCA ATAGATTTGG GGGATTTTTT      16260

AATATGGTAC TGGATAAGGC AAGTTGTGAT TTGCTTCAAT ATTTGATGGA TCAAGAAACG      16320

TCCAAAACGA TTATGGCGAT TTCGAAAGAT TTGAAAGAGT CAAGAAGGAA AATTTATTAT      16380

CACATTGACA AAATCAATGC TGCTCTGGGT GACGAGGCGC TTCACATCAT TAGTATTCCA      16440

CGAATTGGTA TTCACTTAAC GGAAGAGCAG AGAGATGCTT GTTGTAAACT ATTATCGGAA      16500

GTAGATTCGT ACGATTATAT CATGAGTGCG CATGAACGTA TGATGATAAT GTTACTATGG      16560

ATAGGTATTT CTAAAGAACG TATTACGATT GAAAAATTGA TAGAGTTAAC AGAGGTATCT      16620

AGGAATACTG TTCTCAATGA TTTGAATAGT ATTCGTTATC AACTAACTTT GGAACAATAT      16680

CAGGTGATCT TGCAAGTGAG CAAGTCACAG GGATACAACC TTCATGCCCA CCCTCTTAAT      16740

AAAATTCAGT ATCTTCAATC GCTTCTATAT CATATTTTTA TGGAAGAAAA TGCCACTTTT      16800

GTATCTATTT TAGAAGATAA GATGAAAGAG AGGTTAGATG ATGAGTGTTT GCTTTCTGTT      16860

GAAATGAACC AATTTTTTAA GGAACAGGTT CCTTTAGTTG AACAAGATTT AGGGAAGAAA      16920

ATAAACCATC ATGAAATAAC TTTTATGTTG CAGGTTCTAC CTTATTTGCT GTTAAGCTGT      16980

CATAATGTTG AACAGTATCA AGAAAGACAT CAGGATATAG AGAAAGAATT TTCTTTGATA      17040

AGAAAAAGAA TAGAGTATCA GGTGTCTAAG AAATTAGGAG AACGGTTGTT TCAAAAGTTT      17100

GAAATTTCTT TGTCAGGACT TGAAGTTTCT CTTGTAGCTG TTCTCCTCCT CTCCTATCGT      17160

AAAGATTTGG ATATTCATGC AGAAAGTGAT GATTTTCGGC AATTAAAACT TGCTTTAGAA      17220

GAATTTATCT GGTATTTTGA ATCACAAATC CGAATGGAGA TTGAGAACAA GGATGATTTG      17280

TTACGAAATT TGATGATCCA CTGTAAAGCC TTGTTATTTA GAAAGACTTA CGGTATTTTT      17340

TCTAAAAATC CTCTAACAAA ACAAATTCGA TCCAAGTATG GAGAATTATT TTTAGTCACT      17400

AGAAAATCTG CGGAAATTTT AGAAGGAGCA TGGTTTATTC GGCTAACAGA CGATGATATT      17460

GCCTATTTGA CGATTCATAT TGGAGGGATTT TTAAAATATA CACCATCATC TCAAAAAAAT      17520

ATGAAAAAAG TTTATCTCGT TTGTGATGAA GGTGTTGCGG TTTCGAGACT TTTGCTGAAA      17580

CAATGCAAAC TTTATTTTCC AAATGAGCAA ATTGACACTG TATTTACAAC AGAACAATTT      17640
```

385

```
AAGAGTGTGG AAGATATTGC ACAAGTTGAT GTAGTGATTA CTACTAATGA TGATTTGGAT    17700

AGCAGATTTC CGATTTTAAG GGTTAATCCT ATCCTTGAAG CAGAAGATAT TTTGAAAATG    17760

CTAGACTATC TTAAACACAA TATATTTCGT AATAAGAGCA AAAGTTTCAG TGAAAATCTT    17820

TCTAGTCTTA TTTCGTCTTA TATTGTAGAC AGCAAGTTGG CTAGTAAGTT CCAAGAAGAG    17880

GTTCAAACAC TTATAAATCA AGAAATAGTA GTTCAAGCTT TTTTGGAAGr TATTTGAAGG    17940

ACAGTCCAAT GATGAACACA AACCTGTGTk TTTCsTGGTC TTTTtTAGTG TTTTGAAGGG    18000

TGGkATACTA ATCTCAAAGA TAACAATTAT ATCCAAAGGA GGCAACATAT GCCAAACGTC    18060

AAAGAAATTA CAAGAGAGTC ATGGATTTTA GCCACTTTCC CAGAGTGGGG AACATGGTTG    18120

AACGAAGAAA TCGAAGAAGA AGTCGTACCT GAAGGCAACT TTGCCATGTG GTGGCTAGGC    18180

AACTGTGGTA CTTGGATTAA GACACCAGCT GGTGCTAACG TTGTCATGGA CCTTTGGTCA    18240

AACCGTGGAA AATCAACCAA AAAAGTGAAA GATATGGTTC GTGGGCACCA AATGGCAAAT    18300

ATGGCAGGTG TTCGTAAGCT GCAACCAAAC TTGCGTGTTC AGCCAATGGT TATCGATCCA    18360

TTTGCTATCA ACGAACTAGA CTATTACTTA GTTTCACACT TCCACAGTGA TCATATCGAC    18420

CCATACACAG CTGCAGCAAT TCTCAATAAT CCTAAGTTAG AGCATGTTAA GTTGG         18475
```

(2) INFORMATION FOR SEQ ID NO: 39:

       (i) SEQUENCE CHARACTERISTICS:
           (A) LENGTH: 7186 base pairs
           (B) TYPE: nucleic acid
           (C) STRANDEDNESS: double
           (D) TOPOLOGY: linear

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

```
CCAGGATTTG GTACCGTTGC AAGTGGTGTG CCTTTCCTCC TAAAGGAAAA TGGAGGAAAA      60

ATCAATCAAT CAGCACATTC AGATATCAAA GTTGCTAAGG TATTGGTCAA GGATGAAGAT     120

GAAAAAAATC GCTTGCTTGC AGCAGGGAAT GACTTTAACT TTGTAACCAA TGTGGATGAT     180

ATTTTATCAG ACCAGGATAT TACTATCGTA GTGGAATTGA TGGGGCGTAT TGAGCCTGCT     240

AAAACCTTTA TCACTCGTGC CTTGGAAGCT GGAAAACACG TTGTTACTGC TAACAAGGAC     300

CTTTTAGCTG TCCATGGCGC AGAATTGCTA GAAATCGCTC AAGCTAACAA GGTAGCACTT     360

TACTACGAAG CAGCAGTTGC TGGTGGGATT CCAATTCTTC GTACTTTAGC AAATTCCTTG     420

GCTTCTGATA AAATTACGCG CGTGCTTGGA GTAGTCAACG GAACTTCCAA CTTCATGGTG     480

ACCAAGATGG TGGAAGAAGG CTGGTCTTAC GATGATGCTC TTGCGGAAGC ACAACGTCTA     540
```

386

```
GGATTTGCAG AAAGCGATCC GACGAATGAC GTAGATGGGA TTGATGCAGC CTACAAGATG        600

GTTATTTTGA GCCAATTTGC CTTTGGCATG AAGATTGCCT TTGATGATGT AGCCCACAAG        660

GGAATCCGCA ATATCACACC AGAAGACGTA GCTGTAGCTC AAGAGCTTGG TTACGTAGTG        720

AAATTGGTTG GTTCTATTGA GGAAACTTCT TCAGGTATTG CTGCAGAAGT GACTCCAACC        780

TTCCTACCTA AAGCGCACCC ACTTGCTAGT GTGAATGGCG TAATGAACGC TGTCTTTGTA        840

GAATCTATCG GTATTGGTGA GTCTATGTAC TACGGACCAG GTGCGGGTCA AAAACCAACT        900

GCAACAAGTG TTGTAGCTGA TATTGTCCGT ATCGTTCGTC GTTTGAATGA TGGTACTATT        960

GGCAAAGACT TCAACGAATA TAGCCGTGAC TTGGTCTTGG CAAATCCTGA AGATGTCAAA       1020

GCAAACTACT ATTTCTCAAT CTTGGCTCTA GACTCAAAAG GTCAGGTCTT GAAGTTGGCT       1080

GAAATCTTCA ATGCTCAAGA TATTTCCTTT AAGCAAATCC TTCAAGATGG CAAAGAGGGT       1140

GACAAGGCGC GTGTCGTTAT CATCACACAC AAGATTAATA AAGCCCAGCT TGAAAATGTC       1200

TCAGCTGAAT TGAAGAAGGT TTCAGAATTC GACCTCTTGA ATACCTTCAA GGTGCTAGGA       1260

GAATAAGATG AAGATTATTG TACCTGCAAC CAGTGCCAAT ATCGGGCCAG GTTTTGACTC       1320

GGTCGGTGTA GCTGTAACCA AGTATCTTCA AATTGAGGTC TGCGAAGAAC GAGATGAGTG       1380

GCTGATTGAA CACCAGATTG GCAAATGGAT TCCACATGAC GAGCGTAATC TCTTGCTCAA       1440

AATCGCTTTG CAAATTGTAC CAGACTTGCA ACCAAGACGC TTGAAAATGA CCAGTGATGT       1500

CCCTTTGGCG CGCGGTTTGG GTTCTTCCAG CTCGGTTATC GTTGCTGGGA TTGAACTACC       1560

CAACCAACTG GGTCAACTCA ACTTATCAGA CCATGAAAAA TTGCAGTTAG CGACCAAGAT       1620

TGAAGGGCAT CCTGACAATG TGGCTCCAGC CATTTATGGT AATCTCGTTA TTGCAAGTTC       1680

TGTTGAAGGG CAAGTCTCTG CTATCGTAGC AGACTTTCCA GAGTGTGATT TTCTAGCTTA       1740

CATTCCAAAC TATGAATTAC GTACTCGCGA CAGCCGTAGT GTCTTGCCTA AAAAATTGTC       1800

TTATAAGGAA GCTGTTGCTG CAAGTTCTAT CGCCAATGTA GCGGTTGCTG CCTTGTTGGC       1860

AGGAGACATG GTGACCGCTG GGCAAGCAAT CGAGGGAGAC CTCTTCCATG AGCGCTATCG       1920

TCAGGACTTG GTAAGAGAAT TTGCGATGAT TAAGCAAGTG ACCAAAGAAA ATGGGGCCTA       1980

TGCAACCTAC CTTTCTGGTG CTGGGCCGAC AGTTATGGTT CTGGCTTCTC ATGACAAGAT       2040

GCCAACAATT AAGGCAGAAT TGGAAAAGCA ACCTTTCAAA GGAAAACTGC ATGACTTGAG       2100

AGTTGATACC CAAGGTGTCC GTGTAGAAGC AAAATAAAGA ATAGAAGATA GGATGGGGAA       2160

ACTCTTGACC AGAGGGGTTC ATATCCTTTT TGTGAAAAGA AGTTTATACT CAATGAAAAT       2220

CAAAGAGCAA ACTAGGAAGC TAGCCGCAGG CTGCTCAAAA CAGTGTTTTG AGGTTGCAGA       2280

TAGAACTGAC GAAGTCAGCT CAAGACACTG TTTTGAGGTT GCAGATAGAA CTGACGAAGT       2340
```

387

```
CAGTAACCAT ACTACGGTAA GGTGACGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTAT      2400

TAGTTAAAAA CGTGATAAAG GAGAAATAAA GATGGCAGAA ATTTATCTAG CAGGTGGTTG      2460

TTTTTGGGGC CTAGAGGAAT ATTTTTCACG CATTTCTGGA GTGCTAGAAA CCAGTGTTGG      2520

CTACGCTAAT GGTCAAGTCG AAACGACCAA TTACCAGTTG CTCAAGGAAA CAGACCATGC      2580

AGAAACGGTC CAAGTGATTT ACGATGAGAA GGAAGTGTCA CTCAGAGAGA TTTTACTTTA      2640

TTATTTCCGA GTTATCGATC CTCTATCTAT CAATCAACAA GGGAATGACC GTGGTCGCCA      2700

ATATCGAACT GGGATTTATT ATCAGGATGA AGCAGATTTG CCAGCTATCT ACACAGTGGT      2760

GCAGGAGCAG GAACGCATGC TGGGTCGAAA GATTGCAGTA GAAGTGGAGC AATTACGCCA      2820

CTACATTCTG GCTGAAGACT ACCACCAAGA CTATCTCAGG AAGAATCCTT CAGGTTACTG      2880

TCATATCGAT GTGACCGATG CTGATAAGCC ATTGATTGAT GCAGCAAACT ATGAAAAGCC      2940

TAGTCAAGAG GTGTTGAAGG CCAGTCTATC TGAAGAGTCT TATCGTGTCA CACAAGAAGC      3000

TGCTACAGAG GCTCCATTTA CCAATGCCTA TGACCAAACC TTTGAAGAGG GGATTTATGT      3060

AGATATTACG ACAGGTGAGC CACTCTTTTT TGCCAAGGAT AAGTTTGCTT CAGGTTGTGG      3120

TTGGCCAAGT TTTAGCCGTC CGATTTCCAA AGAGTTGATT CATTATTACA AGGATCTGAG      3180

CCATGGAATG GAGCGAATTG AAGTTCGTTC TCGTTCAGGC AGTGCTCACT TGGGTCATGT      3240

TTTCACAGAT GGACCGCGGG AGTTAGGCGG CCTCCGTTAC TGTATCAATT CTGCTTCTTT      3300

ACGCTTTGTG GCCAAGGATG AGATGGAAAA AGCAGGATAT GGCTATCTAT TGCCTTACTT      3360

AAACAAATAA AACAGAGAGT GGGGCTTCCC ACTTTCTTCA TTTCTAGAAT ATGAATAGAA      3420

GGGATTTATG AAACACCTAT TATCTTACTT CAAACCCTAC ATCAAGGAAT CAATTTTAGC      3480

CCCCTTGTTC AAGCTGTTAG AAGCTGTTTT TGAGCTCTTG GTTCCCATGG TGATTGCTGG      3540

GATTGTTGAC CAATCTTTAC CTCAGGGAGA TCAAGGTCAT CTCTGGATGC AGATTGGCCT      3600

GCTCCTTATC TTTGCAGTAA TTGGCGTTTT AGTGGCCTTG ATAGCTCAAT TTTACTCAGC      3660

AAAGGCAGCA GTAGGTTCTG CTAAGGAATT GACAAACGAT CTTTATCGTC ATATTCTTTC      3720

CTTGCCCAAG GACAGCAGAG ACCGTCTGAC AACTTCTAGT TTGGTCACTC GCTTGACTTC      3780

GGATACCTAC CAGATTCAGA CTGGTATCAA TCAATTCCTG CGTCTCTTTT TACGAGCGCC      3840

CATTATCGTT TTTGGTGCCA TTTTTATGGC TTATCGAATC TCAGCTGAGT TGACTTTCTG      3900

GTTCTTAGTC TTGGTTGCCA TTTTGACCAT TGTCATTGTA GGGTTATCTC GATTGGTCAA      3960

TCCTTTCTAC AGTAGTCTCA GAAAGAAAAC GGACCAACTG GTTCAGGAAA CGCGCCAGCA      4020

ATTGCAAGGG ATGCGGGTTA TTCGTGCTTT TGGTCAAGAA AAACGAGAGT TACAGATTTT      4080
```

388

```
TCAAACCCTT AACCAAGTTT ATGCTAGATT ACAAGAAAAG ACAGGTTTCT GGTCTAGTTT      4140

ATTAACACCT CTGACCTATC TGATTGTCAA TGGAACTCTT CTCGTTATTA TCTGGCAAGG      4200

CTATATTTCA ATTCAAGGAG GAGTGCTCAG TCAAGGTGCT CTCATTGCTC TTATCAATTA      4260

CCTCTTACAG ATTTTGGTGG AATTGGTCAA GCTAGCCATG TTGATCAATT CCCTCAACCA      4320

GTCCTATATC TCAGTCAAGC GAATCGAGGA AGTCTTTGTT GAGGCTCCAG AGGATATCCA      4380

TTCAGAGTTA GAACAAAAGC AAGCTACCAG AGATAAGGTT TTACAAGTCC AAGAATTGAC      4440

CTTTACCTAT CCTGATGCGG CCCAGCCTTC TCTGAGATAC ATTTCCTTTG ATATGACTCA      4500

AGGACAAATT CTAGGTATCA TCGGGGGAAC TGGTTCTGGT AAATCAAGCT TGGTGCAACT      4560

CTTACTTGGA CTTTATCCAG TAGACAAGGG GAACATTGAC CTTTATCAAA ATGGACGTAG      4620

TCCTCTTAAT TTGGAGCAGT GGCGGTCTTG GATTGCCTAT GTACCTCAAA AGGTCGAACT      4680

CTTTAAAGGA ACCATTCGTT CCAACTTGAC TCTAGGTTTC AATCAAGAAG TATCTGACCA      4740

GGAACTCTGG CAGGCCTTGG AGATTGCGCA AGCTAAGGAT TTTGTCAGTG AAAAGGAAGG      4800

ACTCTTGGAT GCTCTAGTTG AGGCAGGGGG GCGAAATTTC TCAGGTGGAC AAAAACAAAG      4860

ATTGTCTATC GCCCGAGCAG TCTTGCGCCA GGCTCCGTTT CTCATCCTAG ATGATGCAAC      4920

CTCGGCACTG GATACCATTA CAGAGTCCAA GCTCTTGAAA GCTATTAGAG AAAATTTTCC      4980

AAACACGAGC TTAATTTTGA TCTCTCAACG AACCTCAACT TTACAGATGG CGGACCAGAT      5040

TCTCCTCTTG GAAAAAGGTG AGTTGCTAGC TGTTGGCAAG CACGATGACT TGATGAAATC      5100

CAGCCAAGTC TATTGTGAAA TCAATGCATC CCAACATGGA AAGGAGGACT AGAATGAAAC      5160

GACAAACTGT AAACCAGACG CTCAAACGTT TAGCCGTAGA TTTAGCAAGC CATCCTTTCC      5220

TCCTTTTCCT AGCCTTTCTA GGAACTATTG CCCAAGTTGG CTTATCAATT TACCTACCTA      5280

TTCTGATTGG GCAGGTCATT GACCAAGTCC TAGTGGCTGG TTCATCACCA GTTTTTTGGC      5340

AGATTTTTCT CCAGATGCTC TTGGTGGTAA TAGGAAATAC TCTGGTACAA TGGGCCAATC      5400

CTCTCCTCTA TAATCGTCTA ATCTTCTCTT ATACCAGAGA TTTACGGGAG CGAATCATCC      5460

ATAAGCTCCA TCGTTTACCG ATTGCCTTTG TAGATAGGCA AGGTAGTGGA GAGATGGTTA      5520

GTCGTGTAAC CACGGACATC GAACAGTTGG CAGCTGGCTT GACCATGATT TTTAACCAAT      5580

TTTTCATTGG TGTTTTGATG ATTTTGGTCA GTATTCTAGC CATGCTCCAA ATTCATCTCC      5640

TCATGACTCT CTTAGTCTTG CTGTTGACGC CACTGTCCAT GGTGATTTCA CGCTTTATTG      5700

CCAAGAAATC CTATCATCTC TTCCAGAAGC AAACAGAGAC GAGGGGAATT CAGACTCAGT      5760

TGATTGAAGA ATCGCTTAGT CAGCAGACTA TAATCCAGTC CTTCAATGCT CAAACAGAAT      5820

TTATCCAAAG ATTGCGTGAG GCTCATGACA ACTACTCAGG CTATTCTCAG TCAGCCATCT      5880
```

389

TTTATTCTTC AACGGTCAAT CCTTCGACTC GCTTTGTAAA TGCACTCATT TATGCCCTTT   5940

TAGCTGGAGT AGGAGCTTAT CGTATCATGA TGGGTTCAGC CTTGACCGTC GGTCGTTTAG   6000

TGACTTTTTT GAACTATGTT CAGCAATACA CCAAGCCCTT TAACGATATT TCTTCAGTGC   6060

TAGCTGAGTT GCAAAGTGCT CTGGCTTGCG TAGAGCGTAT CTATGGAGTC TTAGATAGCC   6120

CTGAAGTGGC TGAAACAGGT AAGGAAGTCT TGACGACCAG TGACCAAGTT AAGGGAGCTA   6180

TTTCCTTTAA ACATGTCTCT TTTGGCTACC ATCCTGAAAA AATTTTGATT AAGGACTTGT   6240

CTATCGATAT TCCAGCTGGT AGTAAGGTAG CCATCGTTGG TCCGACAGGT GCTGGAAAAT   6300

CAACTCTTAT CAATCTCCTT ATGCGTTTTT ATCCCATTAG CTCGGGAGAT ATCTTGCTGG   6360

ATGGGCAATC CATTTATGAT TATACACGAG TATCATTGAG ACAGCAGTTT GGTATGGTGC   6420

TTCAAGAAAC CTGGCTCACA CAAGGGACCA TTCATGATAA TATTGCCTTT GGCAATCCTG   6480

AAGCCAGTCG AGAGCAAGTA ATTGCTGCTG CCAAAGCAGC TAATGCAGAC TTTTTCATCC   6540

AACAGTTGCC ACAGGGATAC GATACCAAGT TGGAAAATGC TGGAGAATCT CTCTCTGTCG   6600

GCCAAGCTCA GCTCTTGACC ATAGCCCGAG TCTTTCTGGC TATTCCAAAG ATTCTTATCT   6660

TAGACGAGGC AACTTCTTCC ATTGATACAC GGACAGAAGT GCTGGTACAG GATGCCTTTG   6720

CAAAACTCAT GAAGGGCCGC ACAAGTTTCA TCATTGCTCA CCGTTTGTCA ACCATTCAGG   6780

ATGCGGATTT AATTCTTGTC TTAGTAGATG GTGATATTGT TGAATATGGT AACCATCAAG   6840

AACTCATGGA TAGAAAGGGT AAGTATTACC AAATGCAAAA AGCTGCGGCT TTTAGTTCTG   6900

AATAAGCCAT TCTCTTTTGA AAGTTTATGG ACGAAAAAAG TTGCCTTCGA GTGACTTTTT   6960

TGTTACAATA GCTAGAAAAA TTGTTCACTG TAATACTCAA TGAAAATCAA AGAGCAAACT   7020

AGGAAGCTAG CCGTAGGTTG CTCAAAGCAC AGCTTTGAGG TTGTAGATAA GACTGACGAA   7080

GTCAGTTCAA AACACTGTTT TGAGGTTGCA GATAGAACTG ACGAAGTCAG CTCAAAACAC   7140

TGTTTTGAGG TTGCAGATAG AACTGACGAA GTCAGCTCAA AACAGG   7186

(2) INFORMATION FOR SEQ ID NO: 40:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 14273 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

CTGAAAATTC TAAAAAATTT ATAAGTAAGG AATTAATTAG TTATTTTTGT GATAAAGTTT   60

```
                                         390
    ATGATGAAAT ATTTGTTGAA GAGGTAGTTC CGCACGTTTT TCTGCCATAT GAATCTGACT     120

    TACTTCTTAT TTTACCAGCT ACGGCAAATG TGATTGGCAA AATTGCTAAT GGTATTGCTG     180

    ATGATTTAGT TACAGCAACT GTTTTAAACT TTAATAAAAA AATAATTTTT TGTCCCAATA     240

    TGAACTCTAC TATGTGGGAC AATCACATAG TTCAAAGAAA TGTATCAATT CTAAAGGAGT     300

    TGGGACATAT ATTTTTATTT GAGTCTAAAA AAACATATGA GGTAGGATTG CGTAAAGCAA     360

    TAGATTCAAC ATGTTCAATG TTACAACCAC AGTCGTTAGT AAAAGAACTT ATCAAATTAG     420

    AAAATATTGT CCTTGAAGAG GGACATTAAA AACTACTGAG AATATTAATG AGGGGAAAAA     480

    ATGGAAAATT CATCAATCGA TGTAGATATG CTGTTGGAAG AATTGACACA AGAAGCAATG     540

    GTCGTTGTTG CTGTTGATAA GGACTGTTAA TTTAAACTTA TGGCAATATA TGAAAGGTTA     600

    CTGGATGTTT TAAATTATGC AGGCAGTAGC CTTTTATTAT ATACAAATGG ATAAAGTAAG     660

    GATAATACAA TGATTAATAA AAAAATACAA CAAGTTGTTT TGGAATCATT ACAGAATTTT     720

    TTGAATGGGA ACTTCATTTC GCCTTGTGTA GTCTATGATT TTGGCTTGCT GGAAACTGTA     780

    CTTGATGAAT TTAAAAATCA AATTCCTGTA ACATTCAATT ACCAACTTTT TTATGCCGTT     840

    AAAGCAAATT CAAATGAGAA GATACTTGAA TTCTTAGTAG ATAAAATTGA TGGAGTTGAT     900

    GTGGCGTCAT TATCTGAATT AGATGTGGCT AAAAAATTTT TCCCACCAAC TCAAATTTCT     960

    GTTAATGGTC CCGCATTTTC TTATGAAACT TTATATAATC TGATTAAAAA ACAATATAAA    1020

    GTTGATATTA ACTTTTTGGA ACATCTTCAA CAATTTTCCC CAAAAGAATC TGTTGGAATA    1080

    AGAGTAACGG AGCCAGATGA ACTTAATAAT CGTATGAGTC GATTTGGAAT AAATATTTGC    1140

    AGTGATAATT GGACTAGTAA TTTACAAAAT CCTTTAATTA CACGACTGCA TTTTCATTTT    1200

    GGAGAAAAAG ATGATAAATT TATTGTTAAG TTAGATAAAA TATTATTTAA GTTACAAGAA    1260

    ATTAATAAAC TTAGAGAGGT TAGAGAAATA AATCTTGGAG GCGGTTTTAT GAAATTATTT    1320

    ATGGAAAATC GTTTGAAAGA ATTTTTTCTA TCACTTATGG AAATCTATAA AAAGTACGAT    1380

    ATTGATAGTA CTGTGACTAC AATAATAGAA CCAGGTAGTG CAATTACTTC ATTTTCTGCC    1440

    TATATGATTA CTAGCCCAGT TAATGTTAGT GAGGTGAATG AGCAGCAGGT TATCACGTTA    1500

    GACACATCAA TATACACCAA TACATTATGG TTTGTTCCGC ATATTATTAC AACGTTAAAT    1560

    TCAAGTAGTA AAGAGCGTTA TAGTACTATT CTCTATGGTA ATACCTGTTA TGAACATGAC    1620

    AAGTATAAAA TGAAAGTTTC GCTTCCAAGG TTAACTCAAA ATAGCAGTAT AGTGTTTTTT    1680

    CCTGTAGGAG CTTATATAAA AAGCAATCAT TCAAATTTAC ATCGTAATGA TTTTATGCGG    1740

    GAGGTATATT TGTGGACAAA AAACTTGACA TATTAGATAA AGTTAAGGAA TATTTAGGAA    1800

    ATAAAACTAC TCAAATTCTG GATAATCAAT ATAAAGAATT TTTGAAACTT AATGATATAA    1860
```

391

```
GGCGAGCGTT TGGTATTTCA GAAAAAGTAT TAAACAATTC TTTTAATTTT ACGAGTAAAG    1920

AATTTAATGA TTTAATTAAT AACGAAAATT ATTTATTCGA ATATGCATGT AGAATTAGAG    1980

AGGAATGGAG AAAAAAATGC TTTAATCATT CTTATCGTTT TCTATGCTCA CCTATAATTA    2040

CAGATGATTT TCTTAACACG AAGACATTGA GAAGTAGCCA AATTGAATAT AAATATGAGC    2100

GATATTTATC GAAAAGTTCG ATAGGCGATA GAGCGGTTGA TGGCTTTGTT TCCTTCAATA    2160

CTTTAACAGC TAATGGTATG TCTGCTATTA AACTATGTCT TGAGATATTA AACTCTATTT    2220

TCTTCAAGAA GAAGATTGAT TTATTATATT CAACCGGATA TTATGAAACA AGATTTTTAT    2280

TAAATAATCT TGCTAAATCA GGTATTAGTT GCTATGAGGT AAGTAATTGT GAATTGGATA    2340

AAGATAAATT TTATAATGTA TTCATGATGG AACCCAATCG AGCCGATTTA ACATTACAAA    2400

AAACTGATTT CAAGATAGTA GAATATTTTG TTAAGTATAA AAATAATTCA ATAAAAGTCG    2460

TTATTTTAGA TATTTCATAT CAAGGTTCTA ATTTTAAATT AGTAGAATTT TTAGAGAAAT    2520

TTAAATTTGC GAATGTAATT ATTTTTGTGG TACGATCTTT GATAAAATTA GATCAAATGG    2580

GATTAGAATT GACAAATGGG GGAATAATAG AAGTGTTTAT TCCTAATCAT TTGAGAAAGT    2640

TGAAAAATTT TATTGAAGAG GAATTCAATA AATTTAGAAA TTCTCACGGA GCTAATCTAA    2700

GCCTCTATGA ATACTGTTTG CTTGATAATT CTTTAACTTT AAAAAATGAT TGGAACTATT    2760

CTGATTTAGT TATGAAATTT ACGAGTAATT TTTATGCTGA TATAAAAGAC TTGTTCATGG    2820

AAAATTCTGA TATTGAAATC ATCCATGAAG AGGGAGTACC TTTTGTATTT TTAGATTTAA    2880

TAGGTGAAGG TAAAAAAGAA TATGAAATGT TTTTTCAATG GTTAAACTTC TTTTACAAAC    2940

AGCTTGGAAT CACATTGTAT GCTAGAAATA GTTTTGGGTT TCGGAATCTA ACAGTAGAGT    3000

ATTTTGGAAT TATTGGGACA GAAAGATATA TATTTAAGAT TTGTCCAGGT GTTTATAAAG    3060

GGTTAAGTTA TTATTTGATG AAATTTTTAT TAAAATCTTT TTCAAATGAA TATTTAAAAA    3120

CTACTGATGA GGTTAATAGA TGAAAAATTT GATAAAGTTG CTAATAATTA GATTGATTGT    3180

TAACTTAGCA GACAGTGTAT TTTATATAGT AGCATTGTGG CACGTTAGCA ATAATTATTC    3240

TTCGAGCATG TTCTTAGGAA TATTTATTGC AGTAAATTAT CTACCGGATT TGTTACTAAT    3300

CTTTTTTGGA CCAGTTATTG ACAGAGTAAA TCCGCAAAAA ATTCTTATAA TATCAATTTT    3360

GGTTCAATTA GCAGTGGCTG TAATATTTTT ATTATTATTA AACCAAATAT CATTTTGGGT    3420

GATAATGAGT CTAGTGTTTA TTTCAGTAAT GGCTAGCTCC ATAAGTTACG TGATAGAAGA    3480

TGTGTTGATT CCTCAAGTGG TAGAATATGA TAAGATTGTA TTTGCAAATT CTCTTTTTAG    3540

TATTTCGTAT AAAGTATTAG ATTCTATTTT TAATTCATTC GCATCATTTT TACAGGTGGC    3600
```

392

```
AGTAGGATTT ATTTTATTGG TTAAGATAGA TATAGGCATA TTTTTACTTG CTCTATTTAT      3660

ATTGTTGTTG TTAAAATTTA GAACTAGCAA TGCGAATATA GAAAACTTCT CTTTCAAATA      3720

TTACAAGAGA GAAGTGTTGC AAGGTACAAA GTTTATTTTA AATAATAAAT TATTATTTAA      3780

AACCAGTATT TCTTTAACGC TTATAAACTT TTTTTATTCA TTTCAGACAG TAGTTGTACC      3840

GATTTTTTCT ATTCGATATT TTGATGGTCC GATTTTTTAT GGTATTTTTT TAACTATTGC      3900

TGGTTTGGGT GGTATATTGG GAAATATGCT AGCGCCAATC GTAATAAAAT ATTTAAAATC      3960

GAATCAAATT GTTGGTGTAT TTCTTTTTTT GAACGGCTCA AGTTGGTTAG TAGCAATTGT      4020

TATAAAAGAC TATACTTTAT CACTTATTTT ATTTTTCGTT TGTTTTATGT CTAAAGGAGT      4080

CTTCAATATT ATTTTTAATT CGTTGTACCA ACAAATACCT CCACATCAAC TTCTTGGTAG      4140

GGTAAATACT ACCATTGATT CTATTATTTC TTTTGGAATG CCAATTGGTA GTTTAGTTGC      4200

AGGAACGCTT ATTGATTTGA ATATTGAATT AGTGTTAATT GCTATTAGCA TACCTTATTT      4260

TTTGTTTTCT TATATTTTTT ATACGGATAA TGGATTGAAA GAATTTAGTA TATATTAGAA      4320

ATGTTTATGT TCATTCAAAA GCATAATGAC TATAACTGAA AAAGAAAAGT GATATCTTTA      4380

AGGTTGTTCT TCTTGGTGGT GAGATTCGTG AGACAACCCA AGCTTTTGTC GGAAAGATTA      4440

CCAATGCTTT GATGGATAGG ATGTACTTTA GCAAGATGTT TTTAGTGGTA ACGGTATCGT      4500

GGATGGACGT GTAATAACCT CTTCTTTCGA GGAGTATTTT ACTAAAAAAC TAGCCTTGGA      4560

GCGTTCCCCA GAAACGGACT TACTCATTGA CTCTTCAAAG ATTTGGGGAG AAGATTTTGC      4620

TTCATCTGTT CCTTGAAAAA AGTCACAGCA GTCATCACAG ACGATAGTAC TGAACAAAAC      4680

TATGAAGAGT TAGAAATTTA TACGCAGGTG ATTGTATAAA GGATCTGGAA ATAGATAAGA      4740

AGTTGATTAG TATTGACCTA GGTGGTACAA ATATTAAGAT TACTGTTCTT TCAAATGACG      4800

GTGAGATTGA AACTTTGTGG AGTATTACAA CAGATACAAG TGAGAAAGGT TCTCAAATTA      4860

TATCGGACAT CATCAGTTCT ATTAAAAATA AATTGACCGA ACGGAATATT CCTGATAGCG      .4920

ACCTTCTTGG AATCGGTATG GGAAGTTGCT CATCATACTT TCCTTGTAAA TCATAGGGGC      4980

TATAAACTCT CCGTCTACTT GTCCTGCAAC AATTGAAGTC TGCTCAAAAC GCCGTCCGCT      5040

AATCTTTTCA TAGACTTTCT CCCTTTTAGG AGCCTAGCTT TCTAGTTTGT TCTTTGATTT      5100

TTATTGAGTA TACCACTATT TTACTCCCTC TGGCAAGGGA CTTTGTCTAT GTGGAGGGAT      5160

TGGGCTCCTA TGTGGTGGAG CTTTTCTGTT CTTTCTGAAA TATGGTATAA TAGCACTAAT      5220

CAATTTCTAG GAAAATAGAT ACAGAAAGGG GCTGAAAGAT GTCTCATATT ATTGAATTGC      5280

CAGAGATGCT GGCAAACCAA ATCGCGGCTG GAGAGGTCAT TGAACGTCCT GCCAGTGTGG      5340

TCAAAGAGTT GGTAGAAAAT GCCATTGACG CGGGCTCTAG TCAGATTATC ATTGAGATTG      5400
```

393

```
AGGAAGCTGG TCTCAAGAAG GTTCAAATCA CGGATAACGG TCATGGAATT GCCCACGATG    5460

AGGTGGAGTT GGCCCTGCGT CGCCATGCGA CCAGTAAGAT AAAAAATCAA GCAGATCTCT    5520

TTCGGATTCG GACGCTTGGT TTTCGTGGTG AAGCCTTGCC TTCTATTGCG TCTGTTAGTG    5580

TCTTGACTCT GTTAACGGCG GTGGATGGTG CTAGTCATGG AACCAAGTTA GTCGCGCGTG    5640

GGGGTGAAGT TGAGGAAGTC ATCCCAGCGA CTAGTCCTGT GGGAACCAAG GTTTGTGTGG    5700

AGGATCTCTT TTTCAACACG CCTGCCCGTC TCAAGTATAT GAAGAGCCAG CAAGCGGAGT    5760

TGTCTCATAT CATTGATATT GTCAACCGTC TGGGCTTGGC CCATCCTGAG ATTTCTTTTA    5820

GCTTGATTAG TGATGGCAAG GAAATGACGC GGACAGCAGG GACTGGTCAA TTGCGCCAAG    5880

CAATCGCAGG GATTTACGGT TTGGTCAGTG CCAAGAAGAT GATTGAAATT GAGAACTCTG    5940

ACCTAGATTT CGAAATTTCA GGTTTTGTGT CCTTGCCTGA GTTGACTCGG GCTAACCGCA    6000

ATTATATCAG CCTCTTCATC AATGGCCGTT ATATTAAGAA CTTCCTGCTC AATCGTGCTA    6060

TTTTGGATGG TTTTGGAAGC AAGCTTATGG TTGGACGTTT TCCACTGGCT GTCATTCACA    6120

TCCATATCGA CCCTTATCTA GCGGATGTCA ATGTGCATCC AACTAAGCAA GAGGTGCGGA    6180

TTTCCAAGGA AAAAGAACTG ATGACTCTGG TTTCAGAAGC TATTGCAAAT AGTCTCAAGG    6240

AACAAACCTT GATTCCAGAT GCCTTGGAAA ATCTTGCCAA ATCGACCGTG CGCAATCGTG    6300

AGAAGGTGGA GCAAACTATT CTCCCACTCA AAGAAAATAC GCTCTACTAT GAGAAAACTG    6360

AGCCGTCAAG ACCTAGTCAA ACTGAAGTAG CTGATTATCA GGTAGAATTG ACTGATGAAG    6420

GGCAGGATTT GACCCTGTTT GCCAAGGAAA CCTTGGACCG ATTGACCAAG CCAGCAAAAC    6480

TGCATTTTGC AGAGAGAAAG CCTGCTAACT ACGACCAGCT AGACCATCCA GAGTTAGATC    6540

TTGCTAGCAT CGATAAGGCT TATGACAAAC TGGAGCGAGA AGAAGCATCC AGCTTCCCAG    6600

AGTTGGAGTT TTTCGGACAA ATGCACGGGA CTTATCTCTT TGCCCAAGGG CGAGATGGAC    6660

TTTACATCAT AGATCAGCAC GCTGCTCAGG AACGGGTCAA GTACGAGGAG TACCGTGAAA    6720

GCATTGGCAA TGTTGACCAA AGCCAGCAGC AACTCCTAGT GCCCTATATC TTTGAATTTC    6780

CTGCGGATGA TGCCCTGCGT CTCAAGGAAA GAATGCCTCT CTTAGAGGAA GTGGGCGTCT    6840

TTCTAGCAGA GTACGGAGAA AATCAATTTA TTCTACGTGA ACATCCTATT TGGATGGCAG    6900

AAGAAGAGAT TGAATCAGGC ATCTATGAGA TGTGCGACAT GCTCCTTTTG ACCAAGGAAG    6960

TTTCTATCAA GAAATACCGA GCAGAGCTGG CTATCATGAT GTCTTGCAAG CGATCTATCA    7020

AGGCCAATCA TCGTATTGAT GATCATTCAG CTAGACAACT CCTCTATCAG CTTTCTCAAT    7080

GTGACAATCC CTATAACTGT CCTCACGGAC GTCCTGTTTT GGTGCATTTT ACCAAGTCGG    7140
```

394

```
ATATGGAAAA GATGTTCCGA CGTATTCAGG AAAATCACAC CAGTCTCCGT GAGTTGGGGA      7200

AATATTAAAA GTATAAAAAA GTCTGGGAAA AATTTTCAAA ATCAAAAAAA CGCATAAAAT      7260

CAGGTGTTCA AAAACCTTGA TTTTATGCGT TTTATCATGG AAATAGTTAC TTCATTTTTT      7320

CCTAATTCTT TTCGAAACTC TTTTTAAACG ACGTCAGTTT TATCAGTAAT CTCAAAACAG      7380

TGTTTTGAGC TAATTTTGCC AGTTTTGTCT GTAACATCGA AGTTGTGTTT TACCACTCTG      7440

CGACTGGTTT CCTAGTTTGC TCTATGATTT TCACAGAGCA TTAAATTGCG ATTTTGCCAA      7500

GTTTCTTTAT TCGTCTAAAA GTAGAGTCTG TTCTATGCGT CTAATGTACG AATCAGGTTG      7560

ACCATTTCAA TAGCTCCTTG TGCACACTCA GAACCCTTAT TTCCTGCTTT AGTACCAGCT      7620

CGTTCTATGG CTTGTTCAAT TGTATCTGTC GTTAGCACAC CAAACATAAC AGGAATTTCG      7680

CTATTTAAAC TGATTTGGGC GATTCCCTTA GATACCTCGC TACATACATA ATCATAATGA      7740

CTTGTATTCC CTCTAATGAC AGCTCCCAAG CAGATAATTG CATCATATTT TTTACTTTTT      7800

GCCATTTTTG ATGCAATCAG TGGTATTTCA AAAGCTCCTG GAACCCAGGC TACCTCTATA    ' 7860

TCTTTCTCGT TTACATTCTC TCTTTTGAGA TTATCTAGTG CTCCAGATAA TAATTTTGAA      7920

GTTATAAATT CATTAAATCT CGCTACAACA ATACCTATTT TAATATTGTT TGCTACTAAA      7980

TTACCTTCAT AAGTGTTCAT TTATTTTTCC TCCATATTTA AAATGTGACC CATTCGATTT      8040

TTCTTTGTTT CTAAATAAAA ACTATCGTAA GGATTGGCTT CTATTTCGAT TGATATTCTA      8100

CTGGAAATGG TAATTCCATA TTTTTCTAAC TGTTCAACCT TGTCACCATT ATTTGTCAGT      8160

AAATGAAGTG ACTGAAGTCC CAGATCTTTA AGCATTTTTG CTCCAATATG ATATTCTCTT      8220

AAATCACCTT CAAAGCCTAA TGCAAGATTG GCATCAAGCG TATCCATGCC TTGATCTTGT      8280

AAATGATAGG CTTTTAATTT ATTGATAAGT CCAATTCCTC GTCCCTCCTG TCGCAAGTAA      8340

AGTAAGACAC CCGAACCATT CTCAACAATC ATTTTCATAG CCTTATCGAA TTGCTGTCCA      8400

CAATCGCAAC GTAAAGAGCC TAAAACATCT CCTGTTAAAC ATTCGGAGTG GACCCGACAT      8460

AATACATTGG CTTCATCCTC TATATTTCCC ATAATAAGAG CAAGATGATG TTCCCCATTT      8520

AGTTTATCTA TATAGCTAAT TGCTTTGAAA TTACCGTATC TAGTAGGCAT ATTGACAGTT      8580

GAAACTCGTT CTACCAGCTG ATCATATACT TTTCTATATT CTTGTAATTC TTTGATGGTA      8640

ATTAGTGGAA TGTTGTGTTT TTTCGAGAAC TGAATTAAAT CATCTGTTCT CATCATTTTG      8700

CCATCATGAT TCATTATTTC ACAACATAGG CCACACTCTT TTAGTCCAGC TAATTTTAAT      8760

AAATCAACAG TTGCTTCTGT GTGTCCATTT CTTTCTAGGA CACCACCTTT TTTTGCAATT      8820

AAAGGAAACA TGTGTCCTGG CCTGCGAAAA TCAGAGGGTG TTATATCTTC AGCTACACAC      8880

ATACGTGCGG TCAGTCCTCT TTCCTCGGCA GAAATACCTG TGGTCGTTTC TTTATAATCA      8940
```

395

```
ATTGAAACTG TAAAAGCAGT CTTATGATTA TCTGTATTGT TTTCAACCAT AGGTGAAAGC    9000

ATTAATTGAT TAGCTAAACT TTCGCTCATA GGCATACAAA TTAATCCTTT GGCATAAGTA    9060

GCCATAAAAT TAACATTTTC TGTTGTAGCT GCTTGTGCAG AACAAATTAA GTCTCCTTCA    9120

TTTTCTCTAT CCTTGTCGTC TATAACAAGA ACAAGTCGTC CCTTCTGCAA TGCTTCTAAT    9180

GCTTCTTGTA TTTTTCGATA TTCCATTGAC TGATTATCCT TTCTGCTAAA ATCCATTTTG    9240

ATATAATAGT TCCTTAGATA TTTCTGATTT TGGAGAGTTA TCCATCAGTT TTTGCACATA    9300

TTTACCTAAG ATATCATTTT CAAGATTTAC TGTACTCCCG ACTTGTTTAC TCTTAAGAAT    9360

GGTTTGTTCC AAGGTATGAG GGATAACAGA TACTGAAAAG TTTACTTTGG AGACTTTAGC    9420

GACAGTCAGA CTAATGCCGT CAATTGTAAT AGATCCTTTT TCAACTATTA AATCTAAAAT    9480

TTCTTTTTGT GTGTTGATTT GATACCTAC AGCATTATCA TCTTTTTTTA TTGACGAGAT    9540

TTTTCCTGTA CCATCAATGT GTCCTGTAAC GACGTGACCC CCAAGTCGAC CGTTGACAGA    9600

TAAGGCTCTT TCTAGATTCA CCTCACTTCC ATGTTTTAAT AGAGTAAGAG CTGTTCGACT    9660

CCATGTTTCA TTCATTACAT CAACTGTAAA GGATTGATGA TTGAAATGAG TAACTGTAAG    9720

ACAGATACCA TTTACTGCTA TACTATCGCC TAAATGGATA TCCGTTAATA TTTTTGAGGC    9780

TTTAATTGAT AGTTTACAAT TACGAGAGTC TTTCTGTATT CTTTCAACTT TTCCGATTTC    9840

TTCAATTATT CCTGTGAACA TGGATAAATC ACTTCACTTT CTATGAGATA GTCATTTCCT    9900

ATTTGAGAAA ATGCATAAGG TTTCAATCTA ATAGCGTCAT TTGGCAAAGA AATACCTTCA    9960

CCTCCGACAG GAAACTTGGC ACTACCTCCA AAAACTTTTG GTGCAATATA TATTTTCAGC    10020

TCATCAACAA TTTGTTGTTC CAAAGCACTC CAATTCATTA GACTGCCCCC TTCTAGAACT    10080

AGGCTATCAA TCTGCATGTT TCCTAGATGT TGCATTAAAC TCGATAAGTC TATATGATTG    10140

CCTTTTTTCT TTATGGAAAG TATTTCACAG CCATGATTTT GATATAGCTT CATTTTATTT    10200

TTGTCTTCAG AGGAAGTGGC AATGTAAGTT TTAATATCAT TTGCTGTTTT TACGATTTTA    10260

GAGGTAAGAG GAGTTCGTAA ATGTGTATCG CATATGATAC GGATAGGATT TTTCCCTTCC    10320

TCCAATCTAC ATGTCAGCAA AGGATCGTCT TGAATAACAG TATTGACTCC CACCATAATT    10380

GCACTAACAT GGTGTCGTAA CTGATGCACA TGCTTTCTTG CTTCTTCTTC AGTAATCCAT    10440

TTGGATTGAT TTGTTTTAGT GGCTATTTTT CCATCCATTG ACATTGCATA TTTCATAAAA    10500

ACATAGGGTA CATGCTGGGT AATATACTTT CTAAAACTTT TTATTAAGTT AAGACACTCA    10560

TTTTCTAAAA TTCCAACAGT AACTTGAAGA TTATTTTCCT CAAGTATCTT TACTCCTTTT    10620

CCAGATACAA TAGGATTACA GTCTAGGCTT CCAATGACTA CTCTTGTAAT ACCACTATCG    10680
```

396

```
ATTATAGCAT CTATACAGGG AGGTGTTTTC CCGAAGTGAC AACAGGGTTC AAGTGTTACA    10740

TAAAGCGTCG CTCCGACAGG GGATTCTCTA CAGTTTTTAA GAGCATTTCT CTCAGCATGT    10800

GGGCCACCAA AAAACTCATG ATAACCTTGT CCGATAATGT GATTATCTTT TACAATAACT    10860

GCGCCGACCA TAGGATTGGG ATTGACGTAA CCAGCCCCTT TTTGTGCCAG TTTTATTGCT    10920

AATTTCATAT ATTTTGAATC GCTCATCTCG CTACCTCCAA AAAAATATAC CTTGAATAGG    10980

GGACTACTCA AGGCATACAA AAGAAAACTT ATGCGATTAA CAAAAATGCT CTGAAATGAC    11040

AAGTAATCAT TTCAGAGCAC GCAAAAAGCA CAAATATACT TTTATCTTCT TTCATCCAGA    11100

CTATACTGTC GGCTTTGGAA TTTCACCAAA TCATGCCTTT CGGCTCGTGG GCTATACCAC    11160

CGGTAGGGAA TTTCACCCTG CCCTGAAGAT AGTTATTCAA TTACAGATGA TTATAGTACT    11220

TAATTTTGAA TATGTCAACA GATAAATACC GATTGTTTTT GATATACTGT ATTTGTGATA    11280

ATCGATTCTC GCTCCTCGGA TAAAGAAAAT ATGATATACT AGATAAACGA AATAAGAGAG    11340

AAGGAATACT ATGTACGCAT ATTTAAAAGG AATCATTACC AAAATTACTG CCAAATACAT    11400

TGTTCTTGAA ACCAATGGTA TTGGTTATAT CCTGCATGTG GCCAATCCTT ATGCCTATTC    11460

AGGTCAGGTT AATCAGGAGG CTCAGATTTA TGTGCATCAG GTTGTGCGTG AGGACGCCCA    11520

TTTGCTTTAT GGATTTCGCT CAGAGGATGA GAAAAAGCTC TTTCTTAGTC TGATTTCGGT    11580

CTCTGGGATT GGTCCTGTAT CAGCTCTTGC TATTATCGCT GCTGATGACA ATGCTGGCTT    11640

GGTTCAAGCC ATTGAAACCA AGAACATCAC CTACTTGACC AAGTTCCCTA AAATTGGCAA    11700

GAAAACAGCC CAGCAGATGG TGCTGGACTT GGAAGGCAAG GTAGTAGTTG CAGGAGATGA    11760

CCTTCCTGCC AAGGTCGCAG TGCAAGCAAG TGCTGAAAAC CAAGAATTGG AAGAAGCTAT    11820

GGAAGCCATG TTGGCTCTGG GCTACAAGGC AACAGAGCTC AAGAAAATCA AGAAATTCTT    11880

TGAAGGAACG ACAGATACAG CTGAGAACTA TATCAAGTCG GCCCTTAAAA TGTTGGTCAA    11940

ATAGGAGCAG AGAATGACAA AACGTTGTTC GTGGGTCAAG ATGACCAACC CGCTCTACAT    12000

CGCCTATCAT GATGAGGAGT GGGGCCAGCC CCTCCATGAT GACCAAGTAT TGTTTGAGTT    12060

GTTGTGTATG GAAACCTATC AGGCAGGCCT GTCTTGGGAA ACGGTACTCA ACAAACGCCA    12120

AGCTTTCCGA GAAGTCTTTC ATAGCTATCA AATTCACTCA GTCGCAGAGA TGACTGACAC    12180

TGAATTGGAA GCCATGCTGG AGAATCCAGC TATCATTCGA AATAGAGCCA AGCTTTTTGC    12240

TACACGCGCT AACGCCCAAG CCTTTCTACA GTTACAGGCA GAGTACGGCT CTTTTGATGC    12300

CTATCTTTGG TCTTTTGTTG AGGGGAAAAC TGTCGTTAAC GATGTTCCTG ATTATCGCCA    12360

AGCGCCAGCT AAAACACCCT TATCTGAGAA ATTAGCCAAA GATCTCAAAA AACGAGGCTT    12420

CAAGTTCACA GGCCCAGTCG CCGTATTGTC TTTTCTACAG GCTGCAGGGC TAGTTGATGA    12480
```

397

```
CCACGAGAAT GATTGTGAGT GGAAAGGTCT TAAATGATGT CTAACAAAAA TAAGGAAATT    12540

CTGATTTTTG CGATTCTCTA TACAGTCCTC TTTATGTTTG ATGGCGTTAA ATTGCTGGCT    12600

TCTTTAATGC CATCTGCCAT TGCAAATTAT CTTGTTTATG TAGTTTTAGC TCTATATGGC    12660

TCCTTCTTGT TCAAGGATAG ATTGATCCAA CAATGGAAGG AGATTAGAAA GACTAAAAGA    12720

AAAATTCTTCT TTGGAGTCTT AACAGGATGG CTCTTTCTCA TTCTGATGAC TGTTGTCTTT    12780

GAATTTGTAT CAGAGATGTT GAAGCAGTTT GTGGGACTAG ATGGACAAGG TCTAAATCAG    12840

TCTAATATTC AAAGTACCTT TCAAGAACAA CCACTACTGA TAGCTGTTTT TGCTTGTGTC    12900

ATTGGACCTC TGGTAGAAGA ATTATTTTTC CGTCAGGTCT TATTGCATTA CTTGCAGGAA    12960

CGGTTGTCAG GTTTACTAAG CATTATTCTG GTAGGACTTG TTTTTGCTCT GACTCATATG    13020

CACAGTTTGG CTCTATCAGA GTGGATTGGT GCAGTTGGTT ACTTAGGTGG AGGCCTTGCC    13080

TTTTCTATTA TTTATGTGAA AGAAAAAGAG AATATCTACT ATCCCCTACT TGTTCACATG    13140

TTAAGCAACA GCCTCTCCTT AATCATTTTA GCTATCAGTA TAGTAAAATG AAATGAGAAC    13200

AGGACAAATC GATTTCTAAC AATGTTTTAG AAGTAGAGGT GTACTATTCT AGTTTCAATA    13260

TACTGTAATA TGTGATGAAA ATGCCAGTAA TGATACCGAG AAAAAAGCTG AGAAACTTTT    13320

CCCAGCTTTA TTTGTTATAG TCAAAGAGAA TGACTTGTTC CTGTGCATCT ACATGAGCAT    13380

GGACCCCAAA GGGTACAATT GCTCTTGGAG TTGCGTGGCC GACATTCAGA TTATAGACAA    13440

TCGGGATATT GCTGTCAATG ATATCCAATA GTGCCTCTTT ATAGTCGTCA TGGAAAGTTT    13500

CATCCATAGG TTTTCCGACC AAGAGTCCAT TGATGACCGC GAATATGCCA GTGTCCTTTA    13560

AAGTTAGCAA CATCTTTTTG AAGTCTTCTG GCTTAGGCTT TTCTTCGCTT GTTTCGAGCA    13620

AGAGGATTTT CCCTTCCCAG TCTGACAAGT CAGGGAAAAG TTTGTATTTT TGGCAGAGTT    13680

CCGTGCTATC TGCGTATCGA GAGTTGTCAA AGATATCGTA GAGGGATTCG AGGCAACCAC    13740

CGAGGATTTT CCCCTCGAAC TGGGCACTTC CTTGCAACAA GTCAAAACCT GTATTTGTAT    13800

GACTGACACG AGGTGTTCCC AGGGCCGTGG GACTAAAATC AGTTCGTTCC TCATACCAAA    13860

CGTCACTAGG GCGGATTTCT GAAATTCTTC CCGTCTCAAT CAATTCTTTA AAGTAGTGAA    13920

GGCTATAGGC TAGCATTTCT TTGTCTAATT CACAAATGTC TGCTAAAAAG GATTGACCAT    13980

AAAAAGTCTT GATTCCTAAT TTATGCAACA TGAGGTGGTT CATGGTTGTA TCCGAGAAGC    14040

CAAGAAAAAT TTTTTGCTTG ATAACCTTTT GGAGTTGGTC ATTTTCAAAA AGATAAGGTA    14100

GCAAGCGATA GGTATCGTCT CCACCGATGG CACATAGGAT CATGTCGATG CTATCATCAG    14160

AAAAGGCATG AATCAAATCC TCTGCACGAG CTTCAGGATG GTCCTTGATA AAGTCTAATC    14220
```

398
CTTTTAACGA ATGGGGCAAA AAGATGGGAT TGGTCCCAGA TCCTTGAGAC GTT   14273

(2) INFORMATION FOR SEQ ID NO: 41:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 9828 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

```
GTGAAGTGCG GCAAAAGGTG CAAGTGATGA GCTCAGGTTC TTTAGCTCTT GACATTGCCC      60

TTGGCTCAGG TGGTTATCCT AAGGGACGTA TCATCGAAAT CTATGGCCCA GAGTCATCTG     120

GTAAGACAAC GGTTGCCCTT CATGCAGTTG CACAAGCGCA AAAAGAAGGT GGGATTGCTG     180

CCTTTATCGA TGCGGAACAT GCCCTTGATC CAGCTTATGC TGCGGCCCTT GGTGTCAATA     240

TTGACGAATT GCTCTTGTCT CAACCAGACT CAGGAGAGCA AGGTCTTGAG ATTGCGGGAA     300

AATTGATTGA CTCAGGTGCA GTTGATCTTG TCGTAGTCGA CTCAGTTGCT GCCCTTGTTC     360

CTCGTGCGGA AATTGATGGA GATATCGGAG ATAGCCATGT TGGTTTGCAG GCTCGTATGA     420

TGAGCCAGGC CATGCGTAAA CTTGGCGCCT CTATCAATAA AACCAAAACA ATTGCCATTT     480

TTATCAACCA ATTGCGTGAA AAAGTTGGAG TGATGTTTGG AAATCCAGAA ACAACACCGG     540

GCGGACGTGC TTTGAAATTC TATGCTTCAG TCCGCTTGGA TGTTCGTGGT AATACACAAA     600

TTAAGGGAAC TGGTGACCAA AAAGAAACCA ATGTCGGTAA AGAAACTAAG ATTAAGGTTG     660

TAAAAAATAA GGTAGCTCCA CCGTTTAAGG AAGCCGTAGT TGAAATTATG TACGGAGAAG     720

GAATTTCTAA GACTGGTGAG CTTTTGAAGA TTGCAAGCGA TTTGGATATT ATCAAAAAAG     780

CAGGGGCTTG GTATTCTTAC AAAGATGAAA AAATTGGGCA AGGTTCTGAG AATGCTAAGA     840

AATACTTGGC AGAGCACCCA GAAATCTTTG ATGAAATTGA TAAGCAAGTC CGTTCTAAAT     900

TTGGCTTGAT TGATGGAGAA GAAGTTTCAG AACAAGATAC TGAAAACAAA AAAGATGAGC     960

CAAAGAAAGA AGAAGCAGTG AATGAAGAAG TTCCGCTTGA CTTAGGCGAT GAACTTGAAA    1020

TCGAAATTGA AGAATAAGCT GTTAAAGCAG TGGAGAAATC CGCTACTTTT TCGATTTTTG    1080

ATTCAAGTTT TTAGATTATA TATAGTAGCT TGAAATAAGA TATGAACAAC TCTATTAGGA    1140

AAGTCAAATT AATTTCTAGA AATGTTTTAG CAGCTACAGC GTACTATTCC AAACTCAACC    1200

AACTATAATA GATCGAAACT AGAATAGTAC ATATCTACTT CTAAAACATT GTTAAAAATC    1260

GATTTGACTT TCCTTATTTC ATTCCGCTAT ATATAGTTTG CTGTTTCTTG TCGCTCCTCT    1320

GGAAAGCTGA TATAATAGCT TTATGAATAA AAAACGAACA GTGGACCTGA TACATGGTCC    1380
```

399

```
GATTCTTCCC TCGCTCTTAA GCTTCACCTT TCCAATTTTG CTATCAAATA TTTTTCAACA     1440

GCTCTATAAC ACTGCTGATG TCTTGATTGT TGGACGATTT CTTGGTCAAG AATCCTTGGC     1500

TGCAGTAGGA GCGACGACAG CGATTTTTGA CCTGATTGTA GGTTTTACAC TTGGTGTTGG     1560

CAATGGCATG GGGATTGTCA TTGCTCGTTA TTATGGGGCT CGGAATTTCA CTAAAATCAA     1620

GGAAGCAGTA GCAGCCACCT GGATTTTAGG TGCTCTTTTG AGCATTCTAG TTATGTTGCT     1680

GGGCTTTCTT GGCTTGTATC CTCTCTTGCA ATACTTAGAT ACTCCTGCAG AAATTCTTCC     1740

TCAATCTTAT CAATATATTT CTATGATTGT GACCTGTGTA GGTGTCAGCT TTGCTTATAA     1800

TCTTTTTGCA GGCTTGTTGC GGTCTATTGG TGACAGTCTA GCAGCCCTGG GATTTCTGAT     1860

TTTCTCTGCC TTGGTTAATG TGGTTCTGGA TCTCTATTTT ATTACGCAAT TGCATCTGGG     1920

AGTTCAATCC GCAGGACTTG CTACCATTAT TTCGCAAGGT TTATCAGCGG TTCTCTGCTT     1980

TTATTATATT CGTAAAAGTG TGCCAGAACT CTTGCCACAG TTTAAACATT TCAAATGGGA     2040

CAAAAGCTTG TACGCGGATC TCTTGGAGCA AGGTTTGGCT ATGGGCTTGA TGAGTTCAAT     2100

TGTATCTATC GGCAGTGTGA TTTTACAGTT TTCTGTTAAT ACATTTGGTG CAGTGATTAT     2160

TAGTGCCCAG ACGGCAGCTC GACGCATTAT GACCTTTGCC CTTCTTCCTA TGACCGCTAT     2220

TTCTGCATCA ATGACGACCT TTGCTTCTCA GAATCTAGGA GCTAAGCGAC CTGACCGTAT     2280

TGTTCAAGGT CTTCGAATCG GCAGTCGTTT AAGTATATCC TGGGCAGTTT TTGTTTGTAT     2340

TTTCCTCTTT TTTGCCAGTC CAGCTTTGGT TTCCTTCTTG GCTAGTTCGA CAGATGGTTA     2400

CTTGATAGAA AATGGAAGTC TCTATCTGCA AATCAGTTCA ACCTTTTATC CCATTTTGAG     2460

CCTCTTGTTG ATTTATCGCA ATTGCTTGCA GGGCTTGGGG CAAAAGATCC TTCCTCTAGT     2520

TTCTAGCTTT ATTGAACTAA TCGGAAAAAT CGTTTTTGTG GTTTTGATTA TTCCTTGGGC     2580

AGGATATAAG GGTGTTATCC TTTGTGAACC TCTTATCTGG GTTGCCATGA CAGTTCAACT     2640

GTACTTCTCA TTATTCCGTC ATCCCTTGAT AAAAGAAGGC AAGGCAATCT TGGCAACCAA     2700

AGTGCAATCC TAGTTGGATT TACTGAATAA AATCCATTTC CTCTAGTGAA AATCGAAAAA     2760

ACTTGTGTTC TCTTCTTTAG TTTGGTGTTG AAAATAGTTT AACAGACTTT TGACTTCTTT     2820

TATATGATAT AATAAAGTAT AGTATTTATG AAAAGGACAT ATAGAGACTG TAAAAATATA     2880

CTTTTGAAAA TCTTTTTAGT CTGGGGTGTT ATTGTAGATA GAATGCAGAC CTTGTCAGTC     2940

CTATTTACAG TGTCAAAATA GTGCGTTTTG AAGTTCTATC TACAAGCCTA ATCGTGACTA     3000

AGATTGTCTT CTTTGTAAGG TAGAAATAAA GGAGTTTCTG GTTCTGGATT GTAAAAAATG     3060

AGTTGTTTTA ATTGATAAGG AGTAGAATAT GGAAATTAAT GTGAGTAAAT TAAGAACAGA     3120
```

```
                                    400
TTTGCCTCAA GTCGGCGTGC AACCATATAG GCAAGTACAC GCACACTCAA CTGGGAATCC    3180

GCATTCAACC GTACAGAATG AAGCGGATTA TCACTGGCGG AAAGACCCAG AATTAGGTTT    3240

TTTCTCGCAC ATTGTTGGGA ACGGTTGCAT CATGCAGGTA GGACCTGTTG ATAATGGTGC    3300

CTGGGACGTT GGGGGCGGTT GGAATGCTGA GACCTATGCA GCGGTTGAAC TGATTGAAAG    3360

CCATTCAACC AAAGAAGAGT TCATGACGGA CTACCGCCTT TATATCGAAC TCTTACGCAA    3420

TCTAGCAGAT GAAGCAGGTT TGCCGAAAAC GCTTGATACA GGGAGTTTAG CTGGAATTAA    3480

AACGCACGAG TATTGCACGA ATAACCAACC AAACAACCAC TCAGACCACG TTGACCCTTA    3540

TCCATATCTT GCTAAATGGG GCATTAGCCG TGAGCAGTTT AAGCATGATA TTGAGAACGG    3600

CTTGACGATT GAAACAGGCT GGCAGAAGAA TGACACTGGC TACTGGTACG TACATTCAGA    3660

CGGCTCTTAT CCAAAAGACA AGTTTGAGAA AATCAATGGC ACTTGGTACT ACTTTGACAG    3720

TTCAGGCTAT ATGCTTGCAG ACCGCTGGAG GAAGCACACA GACGGCAACT GGTACTGGTT    3780

CGACAACTCA GGCGAAATGG CTACAGGCTG GAAGAAAATC GCTGATAAGT GGTACTATTT    3840

CAACGAAGAA GGTGCCATGA AGACAGGCTG GGTCAAGTAC AAGGACACTT GGTACTACTT    3900

AGACGCTAAA GAAGGCGCCA TGGTATCAAA TGCCTTTATC CAGTCAGCGG ACGGAACAGG    3960

CTGGTACTAC CTCAAACCAG ACGGAACACT GGCAGACAAG CCAGAATTCA CAGTAGAGCC    4020

AGATGGCTTG ATTACAGTAA AATAATAATG GAATGTCTTT CAAATCAGAA CAGCGCATAT    4080

TATTAGGTCT TGAAAAAGCT TAATAGTATG CGTTTTCTTG TGGAGATATT TCCTTCAATT    4140

TTGCTACTAT ATTAAACAAA AATCAAAAAG CAAACTAGAA AGTTATGCTC AAATAAAATC    4200

TAAATTTGAC AATGTAAACC GAGTCGGATA GCTTTAAGTA CTGTTTTGAG GTTGAAGATA    4260

CGATTTTTGA TAGGAACTCA TCAATTTTAG ATTTTTAAGC AGCATCAATA AATTGCTTCC    4320

TTGTTTTGTC ATAATTTTTT TATTTAAAAA ATTATGACma GAGTGTGCTA TTCTTTTTAT    4380

GAGAGGTGTA TGAATATGAT AAATGTATGT GATAAATGTA TGTGATGTTG GAAAAAGAAT    4440

AAAAGAACTT AGAATATCTT CAAATCTTAC TCAAGATAAG ATTGCTGAGT ATTTGTCTTT    4500

GAATCAAAGC ATGATTGCCA AAATGGAAAA AGGTGAAAGG AATATCACGA ATGGATTTAA    4560

GTAATAAAGC TTCAAATCTT AGAAAAAAGT TGGGAGCTGA TGGTGAATCG CCGATAGATA    4620

TTTTTAAATT GGTACAAAAG ATAGAAAATT TGACGCTGGT ATTTTATGGA CTCGGAAAGA    4680

ATATTAGCGG AGTCTGTTAT AAAGGAACTC AGTTCAGTCT CATTGCAGTC AATTCAGACA    4740

TGCCATTAGG AAGGTAAAGA TTTTCTTTAG CACATGGACT GTATCATCTT TATTATGATG    4800

AGGTGAAGAA GAGTTCAGTC AGTCTTATCT TGATTGGTGA AGGAGATGAA ACTGAAAGAA    4860

AAGCGGATCA GTTTGCTTCT TATTTTTTAA TTTTCCCATC TTCACTGTAT AGGATGGTTG    4920
```

401

```
AGGAAATCAG AGAAAATGCC AATAGAACTC ATCTTGAAGT AGAAGATATT ATAAAATTGG     4980

GTCAGTTTTA TGGTATCAGT CATAAAGCTA TGTTATATAG ATTGAGGAAT GATGGATACC     5040

TTGATGCAGA AGAAATTAAA AATATGGATA TTAGTGTTAT AGAGACAGCT TCAAGATTAG     5100

GCTATGATAC AAGTTTATAT CGTCCTTTGT CAGAAAGTAA AAAAGAAATG GCATTAGGAT     5160

AATATATTAA TTCAACTGAA CAACTTTTAG AAAATAACAG AATTTCGCAA GGGAAGTATG     5220

AGGAACTGTT ACTAGATGCT TTCAGATATG ATATTGTATA TGGGCTAGAT GAAGAGGGGG     5280

GAGTTGTCGT TTGACTAGTC GTGTATTTAT TGATGCAGAT TGTATTTCAG TATTTTTATG     5340

GGTTGGCACT GAACATCTTT TAGAAAAGCT CTATTTGGGT AAAATTGTTA TTCCACAAGA     5400

GGTGTATGAT GAAATCAATA TACCTACAAT TCCCCATTTA AAATCTAGGA TAGATCAGTT     5460

GGTAGCTAAG GGTTCAGCTG AGATTGTGAG CATAGACATT GGAACTGAAG AATACGCATT     5520

ATATAGAGAT TTAACAAGAA ATCATGATAG TAACAAGATT ATTGGTAAGG GAGAAGGGGC     5580

ATCTATTTCC TTAGCGAAAA AGCATAATGG GATATTAGGA AGTAATAACC TAAGAGATGT     5640

TAAATCATAT GTAGAAGAAT TTTCTTTAGA ATATATGACA ACAGGAGATA TACTGATTGA     5700

AGCGTTTAAA GCGTAATTTA TTACTGAATA AGAGGGCAAT CATATCTGGA ATAATATGCT     5760

TAAAAAGAGA AGGAAAATTG GTGCAAATTC ATTTTCAGAC TATCTTCGTG GAAGTATTCA     5820

TCAAAATAGA CAAAAATAAA TTTGGATAAA TCGAACTCAC TATTCAGGAG GCATATGAGC     5880

AATTCGAAAA AGAAAAGTGT CAAATTGAGC CTATAGGAGT AGAAGTGAAA TAGTAAGTCC     5940

TGCATAGTGG ATGAGAGAAA AGTTCTCCTT GAAGTTTTCC TGAACTATCA GTCGCATGTC     6000

AAACGATATG TAGGGTAATG TGAGAGGGGA TAGCGAGTAG TTTTTGGTTA TTTTATCAAA     6060

AAACTTATAT TTTATTATAC CGAATGATAA AATATAATAA AAATGATAGA ATAAGGAAAA     6120

AACATGAATG TCAAAAGAT AATGTCAATT TTTCAATCCT TTTATGTTGA TGTCAGTATT     6180

GAGGAACTGA CTTTGACTTT ACCAATCAGT TTTGTAAAAA GGTTTGAGTA TACTCAAATG     6240

ACTTTTCATA AGGAATCATT TTTATTGATT AAAGAAAAGA GAAGGGGGAG TTTGAGTTCA     6300

TTTGTTACTC AGGCTCGCAC TATGGGTGAA AAAGCCAATA TGGATGTTGT TTTGGTGTTT     6360

TCGAAGTTAT CAGACAGTGA AAAAAAGCAA TTACTTCAAG CTAGAGTTCC GTTTGTAGAC     6420

TTTAAGGGAA ACCTCTTCTT CCCTCCATTG GGACTAGTAC TCAATGCGAA TGATACTGAA     6480

GTCCCTAAGG AATTAACACC TAGCGAACAA TTAACGTGGA TTGCCTTTTT ATTGACAAAA     6540

GGTCAAAAAG TAGTAGATGT TGATTTGCTT TCACAAGTCA CTGGACTTCC AAACTCAACA     6600

ATTTATAGGT GTTTGAGGAC TTTTAAAGCT TTATATTGGT TAAACAAGCA AAATAAGCTT     6660
```

402

```
TACACATATA CGGTGTCAAA GAAAGAATTA TTCTTAAAAT CCGTGTCATG TTTATTTAAT    6720

CCCATCAAAA AACGGATTTT ATTGCCAGAT GGCGATATAA AGCAGATAAA ATCTGTTTCT    6780

AACCTTCTAT ATGGTGGTGC TTATGCTTTG TCGCATTCAA CTTTTTTAGC TGAAACGGAT    6840

GAAAATATTA GCTATGTCAT ATGGCAGAGA AAATTCAATC AGTTATCCTT GCCACTTTCT    6900

CAGCATGTTT TAAAATGAAA GATGCTAGAG ATATGGAAAT ATCGTCCTTT TGTATCTGAG    6960

TTTTGGAATG ATTTTAAAAA TAATCATGAT AAACAATTTG TAGATCCGAT TTCTCTTTAT    7020

TTGACCTTAA AAGATGATGA TGACCCACGT ATAGAGGAAG AGAGTGAAGC ACTAGAAAAT    7080

ATGATATTAC AGTATCTGGG AGAAGATGAT GCCAGCTAAT ACGAAAGTTA TTTTTCAAGA    7140

AATGTTTGCG GATTTTCAGA ACTATTATGT TCTGATTGGG GGAACTGCTA CCTCTATCGT    7200

ATTGGATTCG CAAGGATTTA AAAGTCGCAC AACAAAAGAT TATGATATGG TCATCATTGA    7260

TGAAGTAAAA AATAAGGAAT TTTATACTAC CTTGAATCA TTTTTAGAAT TGGGAGAGTA     7320

TCAAGGAAGT CAGAAAGATG AGAAAGCGCA GCTTTTTCGA TTTACAACAA CTAATCCTGA    7380

GTTTCCTTCT ATGATTGAAC TATTTAGTAT CTTACCAGAA TATCCATTAA AGAAGGACGG    7440

TCGAGAAATT CCCTTACATT TTGACCAAGA TGCTAGTTTA TCAGCCTTAT TATTGGATGA    7500

AGATTATTAT AAATATATTGG TGCATGAAAA AGAAACCATT CAGGGGTATT CGGTATTGAG    7560

TAATTGTGGT TTATACTCTT CGAAAATCTC TTCAAACCAC GTCAGCTTCC ATCTACAACC    7620

TCAAAACAGT GTTTTGAGCA GCCTGCAGCT AGCTTCCTAG TTTGCTCTTT GATTTTCATT    7680

GAGTATTAAT TATTTTTAAG GCTAAAGCTT GGCTGGATAT GAGGGAGCGC TCTGCCACAG    7740

GTGCTCAAGG TTTAAGTAAG TCCATTAAAA AGCATTTGAA TGACCTTACC CGTTTGACAG    7800

CTTCCTTGCT AGGAGATGAA AAGTTATCGG CTATAACATC AAGTAGTGCG GTAAAAGCAG    7860

ACATGCACCG CTTTGTGATA GAATTAGAGC CTGTGAAGTC AACTATTCTT CAAAATAATG    7920

ACATTTCATT GGATCAAAAT GAAATTTTTG AAATTCTGAA AAATTTTCTC GATGGTTAAA    7980

ATAATTGTAG CGAGATGGCT ATATTGAATT CGTCTATATC TGGAAACTAG AAAAAACTTC    8040

AATTTCAGGA GAAAATGAAG TCAATCTTCC CACAATCAAA CGTATAGTAT CAAGGTTTTT    8100

CAAGACCTGA TATTATGCGT TTTTTGCTTT TCAAAACTTT TTGCCCAGTC TTCGTTTTTA    8160

TCCTCTAGTC ACTTGATTTG TTTCAGGTGG TTTTTTAGTA TAGTAGAATG AAACGAGAAC    8220

AGGACAAATT GATCAGGACA GTCAAATCGA TTTCTAACAA TGTTTTAGAA GCAGAAGTGT    8280

ACTATTCTAG TTTCAATCTA CTATAGTTAA ATCTGCGGTC AAGTCTACTG GTGAATCTAT    8340

GATTGTAATA CTCTTCCAAA ATCTCATCAA CCACGTCAGT CTTGCCTTGC AGTCTGTATC    8400

TTACTGACCA AGCTAGTGAT GGATTTAGAA TAGGTGATTT GGAGCGTCCT ATTAGCTAGG    8460
```

403

```
AAATGCTGCT CATAGTCCTT TGCTGAGGCT AGGGTGTTTC AACATTCAAC ACTCAACTGG        8520

TTGATCTAGT TGATAGGAAG GGAGTTACTA TAAAATACTC AGGCTTCCAT CATATTTTTT        8580

GAAACGATTG TGTAATCAAA ATGTACCAAT ATTGTAGTAT TGGTACAGAA GATGTTGTGA        8640

ATGGATAAAT ATATCATAAC TGCTATCTCA AAAAGATTTC ATATGTCTGT GCATATATAA        8700

TAGACTTCCT GCAAAACTAG AATCCTAGTT CATGATTGAT AATACCAGCA ATCAAATTCA        8760

TTCGTAATCC AAAGCGTTTA CGATGATTTC GATAGGTTGT TGAAAACATT TTAAACGTTT        8820

CTACTTTGGC AAAGATGTTC TCAACCTTGC TTCTCTCCTT AGATAGCGCA TGGTTATAGG        8880

CTTTATCTTC AGCTGTTAGC GGCTTGAGTT TGCTGGATTT ACGTGGAGTT TGTGCTTGAG        8940

GACATATCTT CATGAGCCCT TGATAACCAC TGTCAGCCAA GATTTTACCA GCTTGTCCGA        9000

TATTTCTGCA ACTCATTTTG AACAACTTCA TATCATGACA ATAGTTCACA GTGATATCCA        9060

AAGAAACAAT TCTCCCTTGA CTTGTGACAA TCGCTTGAGC CTTCATAGCG TGAAATTTCT        9120

TTTTACCAGA ATCATTCGCT AATTCTTTTT TTAGGGCGAT TGATTTTTAC TTCCGTCGCA        9180

TCAATCATTA CCGTGTCCTC AGAACTAAGA GGAGTTCTTG AAATCGTAAC ACCACTTTGA        9240

ACAAGAGTTA CTTCAACCCA TTGGCTCCGA CGGATTAAGT TGCTTTCGTG AATACCAAAA        9300

TCAGCCGCAA TTTCTTCATA AGTGCGGTAT TCTAGGCTTA ATTTAGGTTT TCGTCCACCT        9360

TTTGCGTGTT TAAGTTGATA AGCTGTTTTT AATACAGCTA ACATCTCTTT AAAAGTCGTG        9420

CGCTGAACAC CAACAAGACG CTTAAATCGT GTATCAGTTA ATTGTTTACT TGCTTCATAA        9480

TTTCGCAGGG AGTCTATTGA CTCTTTGGTA GGTGTCAATG TTTTTTTCAT CTATCCCGAG        9540

AATTATTTTC CCGCCATTTG TATTTGCAAA TGCTGAGTAG GTTCCCAGA AAGACTCTGG         9600

AAGATTGTTT TTAGCTTTTT TGTATTCTAA ATCAACCCCT TCAAATTTTA AGTCCATATT        9660

TTTCCTTTAC ATCTGTTTTT TGTGGTTCTG GTATTTGTTC AAGTTGAGTG ATAATATAGC        9720

GAATTGAATT TCGAGAGTTT TTACTCAGTT AATTTCTTTT TTAACCCACT TTAATTGCTT        9780

TTTTAACACG GGTTAAAAAA GAAATTAAAG TGGGTTAATT TTTCTTGA                     9828
```

(2) INFORMATION FOR SEQ ID NO: 42:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 3369 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

404

```
CCGCGAAAGA TATTTTTGAA CAAGAGTTTG GACGTGAGGT CCGTGGCTAT AATAAAGTAG        60

AAGTTGACGA GTTTTTAGAC GATGTCATCA AGGACTATGA AACCTATGCT GCCTTGGTCA       120

AGTCACTTCG TCAGGAAATT GCGGATTTGA AGGAAGAATT AACTCGTAAA CCGAAACCTT       180

CACCAGTTCA AGCAGAACCC CTTGAAGCGG CAATTACAAG TTCTATGACG AATTTTGATA       240

TTTTGAAACG CCTGAATAGA TTGGAAAAAG AAGTTTTTGG TAAACAAATT TTAGATAACT       300

CAGATTTTTA AGTAGTTATT TGAGATGTGC AATTTTTGGA TAATCGCGTG AGGAGAATTG       360

TTTCTCATGA GGAAAGTCCA TGCTAGCACA GGCTGTGATG CCTGTAGTGT TTGTGCTAGG       420

CGAAACCATA AGCCTAGGGA CGAGAAATCG TTACGGCAGT TGAAATGGCT AAGTCCTTGG       480

ATAGGCCAGA GTAGGCTTGA AAGTGCCACA GTGACGGAGT CTTTCTGGAA ACAGAGAGAG       540

TGGAACGCGG TAAACCCCTC AAGCTAGCAA CCCAAATTTT GGTCGGGGCA TGGAGTACGC       600

GGAAACGAAC GTAGTATTCT GACTGCTATC AGCTAGAGCT GTTAGTGGTA GACAGATGAT       660

TATCGAAGGA AGTGGTCCTA GTCACTTCTG GAACAAAACA TGGCTTATAG AAAATTGCAT       720

ATAGGTTGGG GCTGAGAAAT TTTCTCAACC TCATTTTTTA AAGTGGACAT ATAGAAAGGT       780

CTTGCAAGAC TGTAACATGA AAAAAGAATT TAATTTAATT GCAACTGTGG CAGCAGGGCT       840

TGAGGCTGTC GTTGGTCGTG AAGTGCGAGA GTTGGGCTAC GATTGTCAGG TTGAAAATGG       900

ACGTGTTCGT TTTCAAGGAG ACGTGAGAGC TATTATCGAA ACCAACCTTT GGCTTCGGGC       960

AGCAGATCGT ATCAAAATTA TCGTAGGAAC GTTCCCACCT AAGACTTTTG AAGAGCTATT      1020

TCAGGGAGTT TTCGCTTTGG ATTGGGAAAA TTATTTACCA CTTGGAGCTC GGTTCCCGAT      1080

TTCAAAAGCT AAATGTGTTA AGTCCAAACT TCACAATGAG CCCAGTGTTC AGGCTATTTC      1140

TAAGAAAGCT GTTGTCAAGA AATTGCAGAA ACACTATGCT CGCCCAGAAG GGGTTCCTCT      1200

GATGGAGAAT GGCCCAGAGT TTAAGATTGA GGTCTCTATT CTCAAAGATG TGGCAACTGT      1260

CATGATTGAT ACGACCGGGT CTAGCCTCTT TAAACGTGGT TATCGTACCG AAAAAGGTGG      1320

CGCTCCTATC AAGGAAAATA TGGCAGCAGC CATTTTACAA CTTTCTAACT GGTATCCAGA      1380

CAAGCCTTTG ATTGATCCGA CCTGTGGTTC GGGGACTTTC TGTATTGAGG CAGTTATGAT      1440

TGCTAGAAAG ATGGCGCCAG GTCTTCGTCG CTCTTTTGCA TTTGAGGAAT GGAACTGGAT      1500

CAGCGATCGC TTGATTCAAG AAGTGCGCAC AGAAGCGGCT AAAAAAGTAG ACCGTGAGCT      1560

TGAGCTGGAT ATCATGGGCT GTGATATTGA TGCTCGCATG GTGGAAATTG CTAAGGCCAA      1620

TGCTCAGGTA GCTGGTGTTG CAGGAGACAT TACTTTTAAG CAGATGCGCG TGCAGGATTT      1680

ACGTTCCGAT AAAATCAATG GAGTAATCAT TTCCAATCCG CCTTATGGTG AACGTTTGTC      1740

AGATGATGCA GGGGTGACCA AGCTCTATGC TGAGATGGGG CAAGTATTTG CACCGCTGAA      1800
```

405

```
AACTTGGAGC AAATTTATCC TGACTAGTGA TGAAGCTTTT GAAAGCAAGT ATGGTAGCCA      1860

AGCAGATAAG AAGCGTAAGT TATACAACGG AACCTTGAAA GTGGATCTAT ATCAATATTT      1920

TGGTCAGCGT GTCAAACGGC AAGAGGTAAA ATAGAAAGGG ATACTCATGA GTAAAAAAAG      1980

ACGAAATCGT CATAAAAAAG AAGGTCAAGA ACCGCAATTT GATTTTGATG AAGCAAAAGA      2040

GCTAACAGTT GGTCAAGCTA TTCGTAAAAA TGAAGAAGTG GAATCAGGAG TCTTGCCTGA      2100

GGATTCCATT TTGGACAAGT ATGTTAAGCA ACACAGAGAT GAAATTGAGG CGGATAAGTT      2160

TGCGACTCGT CAATACAAAA AAGAGGAGTT CGTTGAAACT CAGAGTCTGG ATGATTTAAT      2220

TCAAGAGATG CGTGAGGCTG TAGAGAAGTC AGAAGCTTCT TCGGAGGAAG TTCCATCTTC      2280

TGAAGACATC TTACTACCCT TGCCTCTGGA CGATGAGGAG CAAGGCTTGG ATCCTCTATT      2340

GCTAGATGAT GAAAATCCAA CAGAAATGAC TGAAGAAGTG GAAGAGGAGC AAAACCTTTC      2400

TCGTCTGGAT CAAGAGGACT CAGAAAAGAA AAGTAAAAAA GGCTTTATTT TGACCGTTTT      2460

GGCGCTTGTA TCAGTAATTA TTTGTGTCAG TGCTTATTAT GTCTACCGTC AAGTGGCTCG      2520

TTCGACTAAG GAAATTGAAA CTTCTCAATC AACTACAGCC AATCAATCGG ATGTGGATGA      2580

TTTTAATACA CTTTATGACG CCTTTTACAC AGATAGCAAT AAAACGGCTT TGAAAAATAG      2640

CCAGTTTGAT AAACTGAGTC AACTCAAGAC TTTACTTGAT AAGCTGGAAG GTAGTCGTGA      2700

ACATACGCTT GCCAAATCTA AATATGATAG TCTAGCAACG CAAATCAAGG CTATTCAAGA      2760

TGTCAATGCT CAATTTGAGA AACCAGCTAT TGTGGATGGT GTGTTGGATA CCAATGCCAA      2820

AGCCAAATCG GATGCTAAAT TTACGGATAT TAAAAACTGGA AATACGGAGC TTGATAAAGT      2880

GCTAGATAAG GCTATCAGTC TTGGTAAGAG CCAGCAAACA AGTACTTCTA GCTCAAGTTC      2940

AAGTCAAACT AGCAGCTCAA GTTCAAGTCA AGCAAGTTCA AATACGACTA GTGAGCCAAA      3000

ACCAAGTAGT TCAAATGAGA CTAGAAGTAG TCGCAGTGAA GTCAATATGG GTCTCTCGAG      3060

TGCAGGGGTT GCTGTTCAAA GAAGTGCCAG TCGTGTTGCC TATAATCAGT CTGCTATTGA      3120

TGATAGTAAT AACTCTGCCT GGGATTTTGC GGATGGTGTC TTGGAACAAA TTCTAGCGAC      3180

TTCACGTTCA CGTGGCTATA TCACTGGAGA CCAATATATC CTTGAACGTG TCAATATCGT      3240

TAACGGCAAT GGTTATTACA ACCTCTACAA GCCAGATGGA ACCTATCTCT TTACCCTTAA      3300

CTGTAAGACA GGCTACTTTG TCGGAAATGG CGCTGGTCAT GCGGATGACT TAGATTACTA      3360

AGCAGTCGG                                                            3369
```

(2) INFORMATION FOR SEQ ID NO: 43:

 (i) SEQUENCE CHARACTERISTICS:
  (A) LENGTH: 9713 base pairs

                                          406
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

AAGTTTACAA TTTAAATGAA TTAACAATTT TCCCAACTAA AAGCACTCCA GTTACCGCAA   60

CGTTTGTACT GAATGTACTA AATCGCATTC CATCAACTTC ATCTGTTTCG TCAACTTGAA   120

CAGATACTAA TTGAAGATTT AATACTTCTG CTGCCATAGC TAGCTCCTCC TATTTAAATT   180

TTTGGGATTA AGTACTTTAT CCACCCTCAT ATACTCTCTC CACCAGTAAA ATGCAAGCAA   240

TGATACAAAA TAGATTTAAC TATTTTATAT AGCGAAAACT TACAAATTTT TAAGAAATAA   300

TTTTTGCATT CTTAAAGATA AAATAGGAAC TTTTAGTAAT AAATATTAAA ATAAATAAAA   360

TAATAGATAC TATAAAATTT GGAAGTATTA ACCCCAAAAG ATTCATATCA TCTATTAAAA   420

TATCCTCTAA AGAGTAGTAT ATTAAAGCCA TAATTTTAAT GTTAAGTAAA AATGCAATTA   480

ATGAAGTAAC AAATGTCAAA AATATAGCCT CACCAACTTT AATCTTAACC ATCTGGTAAT   540

TAGAAGTTCC TAAAATTTCA AATTGCTGAA TCTCAATCCT TTCTTGATGC GATGACAAAA   600

ATGCAATTGA AATAATATTT GCAAGTACTA TCAAAATTGG TGCTCCTACA TAGACAATAA   660

ATGCTACTTT TAGCTCTAAA TCACTGTCAT CTTGAAATTG AGATAGTATA TTCTGAGAAA   720

TCATTTGAAA ACTAGAAATT ACTAATATAG CTCCTGTAAT TGCAGCACTG ATAGATTTTA   780

TATAAGACTT ACAATATAGT AAATTCCACT TCGAAACAAT GAACATAAAA TTATTTCTAA   840

ATATAATTAT AGAAAGTAGT TTGATAAAAC ATGACTGTAT AAAAGGAGAT AATTGATAAA   900

TAATCACAAT ATCTAAGATT ACAATATTGA ATATTATCTG GGCCTTCGCT AAAATTGTGC   960

TATCTTGGAA AATTTGTTGC AAAGAAAGCA ACCAGATAAC ACTAAAACCA GCCAATAGCA   1020

GTATTCTTTT TACTATTGAA AGAACATGCC TTATTTTAGA ACTCTTCCTA TTTCTAATCT   1080

TCTTGAACGT ATAAAAGCAA CCACTTAGAA AGGCTAAAAA TGAAATCAAC ACTACTGTAA   1140

TGATACATCC AACAGCACTC GTTTGAAATT GGATATCAGG TAATATATTT TCCCCGAAAA   1200

AGTATTGTAA AAAATAATAA TAATTTGACG TAACAAATAT AGAGCATAGA TATGCAATAA   1260

AACTAATAAT CGAGGAAATG ATAAAAATCT GTCCCCCCAC AAGAAATGAT AGTTGAAGGC   1320

GACTTGCTCC CAACACCTCC AGAAGTTCGT AATCATCTCT AAAAATTTCA ACCAACATAT   1380

TTATTATGTT AGAGAGCACA AAGAATAATG TTACTCCTCC GAATACTATC GGAAACATAA   1440

AAATTGGTTT AGGATCTGGA AGTCCGACAA ATACTTGCGA ATTATTCTCA ACATTAATTA   1500

CCCCATTAAC AGCCAATCCC ATAACTAAAC TCGAAACAAA AATTACTGGT GAAACGCCTA   1560

407

```
ACCATTGTTT CTTATTATGT AAAAATTGAT AGTAAACTAA TCTGAGCATC TCTATTCCTC    1620

CGTAGTTGAT TGTACCTCTA AGATTTTATA CAACTCTTCC CCGCTAGGTC TATGAAGTTC    1680

TTTGAAAATT TTTCCATCTT TCAATATTAA TGCACGATCA GTTTTCGAGG CCAATTCTAT    1740

ATCGTGCGTT ACCATAATTA CACACTTACC CGCCCCTACT AACTCTCTCA ATAATTCAAA    1800

AATTACTTCA CGAGAAACGC TGTCTAAAGC CCCAGTTGGC TCATCAGCAA ATATTATATC    1860

ACTATCAGCA ATAACCGCTC TAGCTATAGC AACCTTCTGT TGTTCTCCAC CAGACAGAGT    1920

TCCAACAAAA TCGTTTAAGC CAGCATTAAA CTTCATTCTT TTGAGTAAGT TTTCTACATT    1980

TTTAATAGTT AATTTTTTTT GTGATAATCG CAAAGGAAGT GCTATATTTT CTATTACCGG    2040

CAGGGAAGGT ATTAAATTGT ATGCTTGAAA TATAAAAGAT ACTTCGTTAC GTCTTATACT    2100

TGACAATTTT GCATTTCTGA TTTTATAGGG GTTGATTCCA TTTAAAATTA CTTCCCCACT    2160

TGTTGGTTCA AGCAAACTAG AAATACATTT TAATAAAGTT GACTTTCCAG AACCACTAAT    2220

TCCTAGAATA CTTATAAATT CTCCTCTCGA AGCAGAAAGA GAAACATTTT TCAGCACTTG    2280

CAACGTTTTA TTATTTCCTA GTAAAAATTG ATGATACAGC CCTTTCACTT TTAATATATA    2340

ATCTTTATCC ATATTCTTGC CTCCAATCAC TTAATTTTGA AAAGTGTTCC ATTTTCCAAT    2400

TTATATATAT CAGTGTATCT CTTGTCATTT AAGTCATAAT GATGTGAAAC TTCAATAAAT    2460

GAAATACCTA AATTGAACAG AATATCATGT ATGGAATTTG AATTATCATT ATCTAAATTA    2520

GCTGATATTT CGTCAAATAA GTACACTTTA TTATTTCTAA TCAGAGCTCT AGCTAAAGCT    2580

ATTTTTTGTT TTTGACCTCC AGACAAATTA CTACCATTTT CACCCACATTG ATAATTTAGT   2640

ATATCTATCT TTTCTAATTC TTCATATAGA TTTACCTTTT TTAACACCTC AATTATCTGA    2700

TCATCTGAAA AATATTCATT TTGAAATAAA GTTACGTTCT CACGAATAGT AGTGTCAAAA    2760

ATATATGGTG TCTGATCAAC TGTTGGTATT GAATCTGAAC TCTTTTTCCC ATGTGATAAC    2820

AAATTTACAT AACCTTTTTG TGGCTTTAAA GAACCATTAA TTAAATTTAA AATCGTTGTT    2880

TTCCCACTAC CAGAAGTTCC TGTTAATAAT ACCCTAAATG GTGACTTAAA TGAGAAGTCA    2940

ATACTTAATT TATTTTCTGG TGTAATAGAA TATACAACAT CTTTCATGTG TATCTCATCT    3000

ATTGATGAAG TATACAGTCC GTTATTATCA TGTTCAGCGT CTATAAAATT CTTCTCTCCA    3060

CTTAAGTATT TTAAAAACGG TTTCCTTAAA TCTTTGGTTG TATTTATCTT ATTTAATGAA    3120

TAGGCAATTG ATTGTATCGG CCCTAAAACT TTATCGTTTG CTAAGAAAAT ACCTATCAGT    3180

TCACTAAAAG AAAGGCTTTT ATGATAAATT ACAAAATAAC ATCCTACAAC CAAGGGAACT    3240

AGAAAGCAAA AACCTGAAAT TAGTACTGCA ACCAATTTTG AAAGAACCTC TGATCGTTTC    3300
```

```
AAATTAAAAG TAGAATCTTC TAGTTTATCC AACTTTTTAT CCGACAAACT AATTATTTCT    3360

TTAGTAACAG AATAAGATTT TAATGTCTTA AAACCATTAA AAATTTCTTT TATTATGTGA    3420

GTATACTCTG CATTGCTGTT AGAGTACTCA TTAGCTGAAT TAGACAACAT CTTCTTCATA    3480

AAGACAGGTA CTATAATCGG CAATGCTGAT AATACAATAA ATATTATTGA nACTAGGAAG    3540

TTTAAATAAA GCATAAAACT TAGAGAGACG ATGAACAACA ATATTGAAGA AATTATTTCA    3600

AAAATTTGTC TAAAATAGTT TTCTTCGATT AATCTCAAAT CATTTGACAA AACTGAAATA    3660

ATAGATGAGT AATCTTTAAC CATTTCAGAA GAAAGATACT GTTCTCTAAA ATATCCTTGT    3720

TTAATTTTTA CATTTATATC TTTAGTTATT GATGCTTCCG TTACTTCTAA ATAGTAATTT    3780

GATATATAGA TTGCTGACCA ACCCAGAATA CTTATAGCAC CAAATCTTAG AACGTCAGAA    3840

AATGAGGAAG TCTGATTTAA ACTACCTGCA TATACAATAA TTCCTGAGAG CAAGACACCA    3900

TTAAACGAAG ATAGAAATAT TAAAATCCCC ATTAATATAA GTTTAGTCTT TTTTATAAAT    3960

TTTAAATAAT TCATAAGTTA TTCCTTCCCA CTTCTTCAAA GAAATAATTT AAAGTATCAA    4020

TCATTAAGAG AACATCTGAT GGAGTAAAAC CTCCATGACC AGCTGCTTTG TTTAAATACA    4080

ACAAACTTTT AACTCCAATA GAATTTAATT TCTTTGACCA CTCTATCACT TCGTTATTAT    4140

TAATATATGG GTCTTTCTCA CCCAAAATAT TAACTATAAC AGTATTTGAG TCTCGTGCCT    4200

TTTCAATATT TTGCATAGGC GAATATGACT TTATATAAGC CTTTACTTCA GGGTCTCTAA    4260

TATCTCCCCA CTCTGCTATT TCGGTCTTAG AAAGAGGATC ATTTGGATTC TGAAGTGTAT    4320

CATAAGGATT TATAAATGGC GAAAATAAGA GAATGCTTTG CAATAAATTT TTTTCCTCGT    4380

TCAACACCGC ACCAGCAATT ATTCCACCTG CACTAGAAGT TATTAAACCT AATCGCTTAC    4440

TGTCAATTAC ATCATTTTCC CTTAAATAAT TTACTCCCTC AATAAAATCT CTGATAGAAT    4500

TCCATTTGTT TAACGCCTTT CCTGAGCGAT ACCATTCACC ACCCAAATAG CCTCCACCTC    4560

TTACATGAAC TATAGCATAA ATAAAACCTG CATCTATTAT AGATAACATA ATTTCATCTA    4620

AATCAGAATT ATCATTCTTA CCATAAGCCC CATAGACACT TAGAATACAT TTTTTTCTTC    4680

TTGGGAGCTC ATCCGTATCT TCACTTTTCC AAAATAAAGA AATCGGTATG CTTACATCAT    4740

AACTGTCTTT TTTAGTCCAA ATCACCTTAG AAAAATATTT AGTATTATTC GATTTTATGA    4800

TGGGTCTTTC AAATTCAGTT TTTAATGTAT TTTCTATTAA ATCAAAACTA AGTATTTTTT    4860

CGTAAAAAGT TCTCCTCTCT AAAAACAGAA GAACACGATC AGAAAATGAA TTTTCATAAA    4920

GTGTTGTCTT TTCATCAAAT GTTATCTTAT TAACACTCAA CTCCCTCAAA CTATTATTTT    4980

TAAATGTAGC AAGATAAAAG ACGGAATTCG CTGCGTTTGA ACAGTCTAAA AGGATATAAC    5040

GTCCTATACA GTGAACTCTT CTAGCCCTAT CTTGATATGG TATAGTAATA GAAACTCTGT    5100
```

409

CTCCCGAAGA AGTTTCCCTT AGAATTAGTT GATCTTTCTT TTCTTCAGTT GAAGAGAGCC   5160

CAAGAAAGTA CTGTGCTTTT TCTGTACTAA ATAGAGCGAT ATCTCTAGGT GTTGGGGCTA   5220

CCGTTTCTGT GTAAGAGTGT CTAACAAAAC CCGTCCGGTC GAAACTGTAT AGAAAAATCC   5280

TGCCTTTCTG AAAGTCTACT GACTTTACAA AACAATTATT GCTATCAATG TGGACTATTT   5340

TTAATCGAAA AGAGCATTCG TTTTCTTCAA ACAGTTCCTC TTCTGTAAAG CTATCAAAAG   5400

ATTTATAGAA TAACTTACTT GGCCTCCCGT ACTCTTTGGA GCGAGTATAC ATAACACCGA   5460

ATTTACCCAA ATAGAACGAA CTTTCTACTG AAATATCTTC AATGATAAAT AACTCTTCCA   5520

TAGTATATTT TTTTATTCCA ATTAAATTAG TCGTACGCAG TGAGGATACA ACCAAAACTA   5580

TATAACTCTC ATCAGATGAA ATCCTAACAT CCTGTAAGAT ACTATCATCT GGCAAAGTAT   5640

ATTTTTCCAC ATCAAAGACA ATTTTAAGTG AATTTGAATT GTCTAAACTG GAAGAACTAA   5700

CCTTAGGAAT CCAGTCATTA TCTTCGACAT ACCATTCCTT TATTACACCA GTATTGGGTA   5760

TACTCCAATT ATCAAATTGG TACCAATATC GCCCTCTCCT AAATATCAAA GAATTCCATT   5820

TTTTTAATTC CTGAAATGAT GAAGAGATAG ACCTCTTATA GTGTGTTTTT TCCTGTATTG   5880

TATTTAAAAA TATTTCATTA CTCTGATTCA CAAGTATGAC CCCTTAATAA TGGTATCTAA   5940

ATATTATATT TGAGGAAGAA TCGTCAATTT ATTATCCATT ATTGATACCA ATCCAATTGC   6000

AACACCCGCA AATCCCGAAG CAATATCTGT TGTTATCTTT AAACCATTAT CTCCCGCAAT   6060

AACAAATCCT TCTTCAATTA CACACAAATA TCTATAAAGT TGTTCAATTA ATTTCTTTTG   6120

TCCTGAAAAG TTATCATCGA TATCACTATA TATATTATTA GCAACTTCAA GACCACAAAA   6180

TCCGTTAAAT AAACCTGGTA ATACACAAAA AACTACATCA GTTGCCCTCT CTAAAGAAGT   6240

TAAATATTTT AAGTATTTGC TTGACAAGAT TTCTTTATTT CTATTAATAA GTAAAAGCAG   6300

GCCAGCACTT CCAGTTGCTA GATATGGTAG TAATCTATGA CCTTGGCTGT ACTGCAATGA   6360

ATTATTACTA TCTACTTTAT AAGCAACTAA TTCTTTATCT ACAGCCAATT CTAGACCATT   6420

TTTATAGATA CTTTCACCAG TTAATTTATA AGCTTCACCG AAGAGCCAAG CTACCCCTGC   6480

GTGACCATAT AGTAATCCAC CAAAATTCTC ATAAGGATCG TTACTCTGAA CATCACTAGC   6540

GCCAACTTTA CAAAAAGTTT CTGGATTTTC TATATAATTT AAAGTATATT CTCTAAGCCT   6600

AATTAGTATT TCTTCTCCTA GTTTATTATC AATTCCCCCT TTACTAAGAA AATACAGTCC   6660

AACCAGTAAA ATTCCAGCCT GCCCACTATA TAAATTTTTA TTTTGTGAAT CTCAAATAT   6720

CTCTATAAAA TGAGTTGTAA AAAGTTCAAC TGCCCGATCT ATCTCCCCAA ATTCATAAAT   6780

GAGCCAGATT GTACCAATTT TACCATCAAA AAGACCAGAA AGGGACGATT TCTTAAAATT   6840

410

```
ATTTACTGCC TCATTAATAA CCTGTGTTCG AATCTCATAA TAGTCATCAA ACTTGAAATT    6900

TTTTACTTTC TTAGCTAGTT GTTGATAACT CCAAAGGATA GCTAAATCTG AAAACGCAAT    6960

TCCTTGATTA AAATTCAGAC CATAATAATG AACTGGGAAG AATCTTGATT GAAATTCTTT    7020

ACGCCACTGT CCATAAGTTA GCGTAAACCC TCTCAATAAT TTTATAATAA AATCTTGTAT    7080

ATCTTGCTCA CTCTCGATAG TTCTAATCTC ATGCATGGGT TTTAAAACTT TTTTCCTGGA    7140

AATATTCTCA ATCTGTGGAC ATTTAGAATC TAGATATGAC AATAAACTTT CTACATAATC    7200

TATATGTTCT CTTGTATAAC CCAAAGACTC AAATAGTTTT TTTCCTTCTA TCCTGGTTTG    7260

ACTTACATAG TTGTATGTCA AATCCGATGT AGTTACTAGT GGCATGTATA AATAATGAGC    7320

TATTTGTCTA ATACCATACC AATCTATCTC ACTGGGAAGT GTTTCTCGCC ATGCTCTAAA    7380

ACCAGGGGCT GCAACTTTAT GTACAACTTT TTCATCATTT GAAAAGACAG CCTGTTCCCA    7440

GTCTATTATA CTAATCTCAT CTTCATCCTT AACCAAGATA TTTCCTAAAT GTAAATCTTG    7500

ATGATATACA TTTTCAGAAT GAAACTTATT CGTTAAATCG ATGAGTTTTT CTACTATCTT    7560

TGAAACTCTC AATAGATAAT CTTTGGTCTT ATCAACAACT TCATATAAAG GAAAATTATT    7620

GGTAACCCAT CTATTTAGTG GAACGCCCTT CATATGTTCA ATTCCTAAGA AGGTGTGCTC    7680

CCAGATCTTA CCGTGCCAGT ATATTTTAGG CGTCTCACTC CATTCATTTA GAATTTTTAG    7740

TGCTTTGCAC TCCGAAGCTA ATTTCTCTGA AGAATAAGTA CCATCAAATC CTAGACCTGT    7800

ATACGGTCTA GCCTCTTTTA AAATTATTTT TTTCCCATCT TCTTTTAGCC TAGCATTATA    7860

TATCCCACCA CTGTTTGAAA ATCTAATTGC ATTATCTATA ATAAAGGGAA AGTCTCCCTG    7920

TTTTTTATCT TTCTTGTCAA GCCATTTATT CAAAAAGTCA GGGGGCACTA TACCTTTTGG    7980

AATTTTAAAT ACTGGTAAAC GTTCATCTTT AACAACTTCA TCGCCAACAA TTAATTCATC    8040

AATAGCAACC TTCTTTTCAT CATCCCTTGA CGGCCTAAAC ACACCATACC TCAGATATAT    8100

TGGTGCTTCA TCCCAACGTT TATCGCTTAA AATATATGGC CCATTATATT GCTTTAAGGC    8160

ACTTTCTAAC CTTTGCAAAA CCGACTCTAA TTCATTTTGA TTTGGATAAC ATGTAATAAA    8220

TTTACCAGAA AATCCTCGAC TAACCAATTT CCCGTTTCGC ATGATAAATT TGTCTTCTGT    8280

ACTAAGATGT TTAAATGGAA TTCGCATTTC ATGGCAAATT TTTGCTACAT CTTGTAACAA    8340

TTCATGTGAA CTGTTATACT CTGAACTAAT GTGTATTTTC CACCCTTGTC TTTCAACAAA    8400

TTTTCCAATA GGGTATTGAT AAACCCACTC ATCATTATTC ATTACTTCGT GCCAATTAAA    8460

AGGCAGACTT ACTTGGTACT TTATGCTAGT ATCTGTACTA TAATCATTAT TAGTGAAAAA    8520

GAAAGGATGC TCCAAATTGA AATTATAATC CATAACAAAA TCTCCAAGAA ATTTTATCAA    8580

ACTTAATATA TCTATAGCTA GACAGACTTA TTTAAATAAA AAGGGAGAAT CCTTTGGATT    8640
```

411

```
CTCCCCATAT AAGCACTAAC ATTCCAACGT GCACATATTG GAACGACATC CATAACTCCA        8700

GAGAATCTCT AAAGTTTACA ATTTAAATGA ATTAACAATT TTCCCAACTA AAAGCACTCC        8760

AGTTACCGCA ACGATTTGTA CTGAATGTAC TAAATCGCAT TCCATCAACT TCATCTGTTT        8820

CGTCAACTTG AACAGATACT AATTGAAGAT TTAATACTTC TTCTGCCATA GCTAGCTCCT        8880

CCTATTTAAA TTTTTGGGAT TAAGTACTTT ATCCACCCTC ATTATACTCT CTCCACCAGT        8940

AAAATGCAAG CAATTATACA ATGTTGTCAC ATAGAAAATA ATGTTTCCGT AACTTTTCAA        9000

AGTAACTTCC ATCTCTCTCC CAAAACTGGA AGTTAGTTTT AGAAGTTACC TAAAAATCAG        9060

GTCACCTATT TTAAAAAAGC AGCAAACTAT AAACTAGTAG GTTCCACACC AAATGTAGTC        9120

CCATACTGCC CCATAAGTCA GATTTATAGC GCACCATACC TAAAAACATC CCAAGTGAAA        9180

CATACAAACA CCAAGCTAGA ATGGTTCCTG TATGATGTGC TAAGGCAAAT AAAACACTTG        9240

TCAAAGCAAC TCTGATATCT AATTTTCTGA CCAAATTCCA TAAAATTTCT CGATACAGAA        9300

ATTCTTCAAC CATACTCGCA TTGATTAAGA ACAATAAAAA TGAAAACCAA GGAATTTGAT        9360

GTTGAAGGCC AATTAAGTTT GCTTGATTCG TGCTTCCTTG AGCATGAATC AGACTAAAAC        9420

ATAGACTTAT AATCAGTAGG CTAACAAATT CAACACCAAG CCATTTCATC CTAGATTTCA        9480

TATTGACCTT ATGCGCTTGT TTGCGTTGGC CATACATCCA TAAAAAAGAA ATGAGTGACG        9540

AACCATAGAG AATCTGTAGT ATAGTTmACT CACCGATACA AAGAAATTTC AATAAGTATA        9600

GAGrTACCAA TAsGACATTT ACTTGTTGGA ATATATAAAC TGGAATTATT CTTTTCATAG        9660

TTACCTCCGA AATAAATCTT CATAATCTAA ATCTAATACC TGCACAATCC TTT             9713
```

(2) INFORMATION FOR SEQ ID NO: 44:

            (i) SEQUENCE CHARACTERISTICS:
                (A) LENGTH: 8657 base pairs
                (B) TYPE: nucleic acid
                (C) STRANDEDNESS: double
                (D) TOPOLOGY: linear

            (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

```
AAAGAAATTG TCAGAGAGTG GCTAGATGAA GTAGCAGAGC GGGCTAAGGA CTATCCAGAG          60

TGGGTGGATG TTTTCGAGCG TTGCTACACC GATACCTTGG ACAATACGGT TGAAATCTTA         120

GAAGATGGTT CAACTTTTGT CTTGACTGGG GATATTCCTG CCATGTGGCT TCGAGATTCG         180

ACAGCCCAAC TCAGACCCTA CCTTCATGTA GCTAAAAGAG ATGCCCTCCT GCGTCAGACC         240

ATTGCAGGTT TGGTCAAACG TCAGATGACC TTGGTACTCA AGGATCCCTA TGCTAACTCC         300
```

412

```
TTCAACATTG AGGAGAACTG GAAAGGGCAC CACGAGACTG ACCACACAGA CCTTAACGGC      360

TGGATCTGGG AGCGCAAGTA TGAGGTGGAT TCGCTTTGCT ATCCTTTGCA GTTGGCTTAT      420

CTCCTCTGGA AAGAGACTGG CGAGACTAGT CAGTTTGATG AGATTTTTGT CGCAGCGACT      480

AAGGAAATTC TCCATCTGTG GACGGTGGAA CAAGACCACA AGAACTCTCC TTATCGTTTT      540

GTCCGAGATA CGGACCGTAA GGAAGACACC TTGGTAAATG ATGGCTTTGG ACCTGACTTT      600

GCAGTGACAG GTATGACTTG GTCAGCTTTT CGTCCGAGTG ATGACTGTTG CCAGTATAGT      660

TACTTGATTC CGTCAAATAT GTTTGCTGTA GTAGTCTTGG GTTATGTGCA AGAAATCTTC      720

GCAGCATTAA ACCTAGCTGA TAGCCAGAGT GTTATTGCTG ATGCCAAGCG TCTTCAGGAT      780

GAAATCCAAG AAGGAATCAA AAACTACGCT TACACCACCA ACAGCAAGGG CGAAAAGATT      840

TACGCTTTTG AAGTGGATGG CCTAGGAAAT GCCAGCATCA TGGATGATCC AAATGTACCA      900

AGTCTACTAG CTGCGCCCTA TCTGGGCTAC TGTTCGGTCG ATGATGAAGT GTATCAAGCT      960

ACTCGTCGTA CCATTTTGAG CTCTGAAAAT CCATACTTCT ACCAAGGAGA ATACGCAAGC     1020

GGTCTCGGCA GTTCTCATAC CTTCTATCGC TATATCTGGC CAATCGCCCT TTCTATCCAA     1080

GGCTTGACAA CAAGAGATAA GGCAGAGAAA AAATTCTTGC TGGATCAGCT GGTTGCCTGC     1140

GATGGTGGTA CAGGTGTCAT GCACGAAAGC TTTCATGTAG ATGATCCGAC CCTCTACTCT     1200

CGTGAATGGT TCTCCTGGGC TAACATGATG TTCTGTGAGT TGGTCTTGGA TTACTTGGAT     1260

ATTCGCTAAG GGGCTCGCTT TAGCTCAACC GATTCTTATC AGAATCACAA GTTTACATTT     1320

AAAACGTTAA AATTTAAATT TAGAATGAGG TTTTACTTCA TGGAAAATGT TGTTGTACAT     1380

ATTATCTCAC ATAGTCACTG GGATCGTGAG TGGTACTTGC CTTTTGAAAG CCATCGTATG     1440

CAGTTGGTGG AATTGTTTGA CAATCTCTTT GATCTCTTTG AAAATGACCC TGAGTTCAAG     1500

AGTTTCCACT TGGATGGACA AACTATTGTC CTTGATGACT ACTTACAAAT TCGCCCTGAA     1560

AATCGCGACA AGGTCCAACG CTACATTGAC GAGGGCAAAC TTAAAATTGG TCCCTTTTAC     1620

ATCTTGCAGG ATGACTACTT GATCTCCAGT GAAGCCAATG TCCGCAATAC CTTGATTGGT     1680

CAACAAGAAG CTGCCAAATG GGGTAAATCA ACCCAGATTG CTACTTTCC AGATACCTTT     1740

GGAAATATGG GACAAGCGCC TCAAATTCTT CAAAAATCAG GCATTCACGT GGCGGCCTTT     1800

GGTCGTGGTG TGAAGCCGAT TGGATTTGAC AACCAAGTCC TTGAAGATGA GCAGTTTACG     1860

TCTCAGTTTT CAGAAATGTA CTGGCAGGGT GTGGATGGTA GTCGTGTTTT AGGTATTCTC     1920

TTTGCCAACT GGTACAGTAA CGGGAATGAA ATTCCAGTTG ACAAAGATGA GGCCTTGACC     1980

TTCTGGAAAC AAAAATTGTC AGATGTGCGT GCCTACGCTT CGACCAACCA ATGGTTGATG     2040

ATGAACGGCT GTGACCACCA GCCTGTACAG AAAAATCTGA GCGAAGCCAT TCGTGTGGCA     2100
```

413

```
AATGAACTCT TCCCGGATGT AATCTTTGTT CATAGTTCTT TTGATGAATA TGTTCAAGCT    2160

GTAGAAGGTG CGCTTCCTGA ACACTTATCA ACTGTTACAG GCGAGTTGAC CAGTCAGGAA    2220

ACAGATGGCT GGTACACACT TGCCAACACT TCTTCATCCC GCATTTACCT AAAACAAGCC    2280

TTCCAAGAAA ATAGCAACCT CCTAGAGCAA GTGGTAGAAC CCTTGACTAT TATCACTGGT    2340

GGACACAACC ACAAGGACCA GTTGACCTAT GCTTGGAAAA CACTTTTGCA GAATGCGCCA    2400

CATGATAGTA TCTGTGGCTG TAGCGTGGAC GAAGTTCACC GCGAGATGGA AACGCGTTTT    2460

GCCAAGGTCA ACCAAGTAGG AAACTTTGTT AAAAGTAACT TGCTCAACGA GTGGAAGGGT    2520

AAAATTGCTA CGGATAAGGC TCAAAGTGAC TATCTCTTTA CTGTCATTAA CACAGGCTTG    2580

CATGATAAGG TCGATACTGT CAGCACAGTG ATTGATGTGG CGACTTGTGA TTTCAAGGAA    2640

TTGCACCCAA CAGAAGGCTA CAAAAAGATG GCTGCTCTTA TCTTGCCAAG TTACCGTGTG    2700

GAGGACTTGG ATGGTCGTCC TGTAGAGGCT ACAATCGAAG ACCTCGGAGC TAATTTTGAG    2760

TATAATTTAC CAAAAGACAA GTTCCGCCAA GCTCGTATTG CTCGTCAAGT GCGCGTGACC    2820

ATTCCAGTTC ACCTAGCGCC GCTTTCTTGG ACAACCTTCC AATTGCTGGA AGGAAAACAA    2880

GAACACCGTG AGGGTATTTA CCAAAACGGA GTGATTGATA CACCATTCGT AACGGTGAGT    2940

GTGGATGACA ACATCACAGT CTATGACAAG ACAACTCACG AAGCCTATGA AGACTTTATC    3000

CGCTTTGAAG ACCGTGGGGA CATCGGAAAC GAGTATATCT ATTTCCAACC AAAAGGAACA    3060

GAGCCAATCT TTGCAGAGCT TAAGGGCCAC GAGGTCTTGG AAAACACAGC TTGCTATGCT    3120

AAAATCTTGC TCAAACATGA ATTGACCGTG CCTGTCAGTG CGGATGAAAA GCTAGAAGAA    3180

GAGCAACAAG GTATCATCGA GTTTATGAAG CGTGAGGCTG GACGGTCAGA AGAATTGACA    3240

AACATTCCTC TGGAAACTGA GTTGACTGTC TTCGTTGACA ATCCACAAAT CCGCTTCAAG    3300

ACTCGCTTTA CTAACACTGC CAAGGATCAC CGTATCCGTC TCTTGGTCAA GACTCATAAC    3360

ACGCGTCCAA GCAATGATTC TGAAAGTATC TATGAGGTGG TGACACGACC AAACAAACCA    3420

GCTGCTTCAT GGGAAAACCC TGAAAATCCT CAACACCAAC AAGCTTTTGT CAGTCTGTAT    3480

GACGATGAAA AAGGGGTGAC TGTATCCAAC AAGGGATTGA ATGAATACGA AATCCTTGGG    3540

GATAACACCA TTGCCGTGAC CATTTTGCGT GCATCAGGTG AGCTAGGTGA CTGGGGCTAC    3600

TTCCCAACGC CAGAAGCACA ATGCTTGCGG GAGTTTGAAG TCGAGTTTGC ACTTGAATGC    3660

CACCAAGCCC AAGAACGCTT CTCAGCCTAT CGTCGTGCCA AAGCCTTGCA GACACCGTTT    3720

ACCAGCCTTC AGCTTGCTAG ACAGGAAGGA AGCGTGGTTG CGACTGGTAG CCTCTTGAGC    3780

CATTCTGTTC TCAGCATACC GCAAGTTTGT CCAACAGCCT TTAAGGTAGC TGAAAATGAA    3840
```

414

```
GAAGGCTATG TGCTTCGTTA CTACAATATG TGTAGTGAAA ATGTACGTGT GCCAGAAAGT    3900

CAACATCTCT TCCTTGACCT ACTTGAACGA CCATACCCAG TTCATTCAGG ACTATTGGCT    3960

CCACAAGAGA TTCGTACAGA ATTCATCAAA AAAGAAGAAA TTTAATTTCA AAAAGTAAAC    4020

ATCAAAAGAA AGGAGGGGCG AAAAAGTAAG AACTAACTGC TGATTCGCCC CTTTTATGGT    4080

AAAAACAATG ACCATTGCAA CGATTGATAT CGGAGGGACT GGGATTAAGT TTGCCAGTCT    4140

GACTCCTGAT GGGAAAATAC TGGATAAGAC AAGTATTTCA ACGCCTGAAA ACTTGGAGGA    4200

TTTACTAGCG TGGCTAGATC AACGCTTGTC AGAACAGGAT TACAGTGGGA TTGCTATGAG    4260

CGTTCCAGGT GCAGTCAATC AAGAGACAGG TGTGATTGAT GGCTTCAGTG CGGTGCCCTA    4320

CATCCATGGC TTTTCTTGGT ATGAGGCGCT TAGCTCTTAT CAGCTACCTG TCCATTTAGA    4380

AAATGATGCC AACTGCGTTG GACTCAGTGA ACTACTAGCT CATCCAGAGC TTGAAAATGC    4440

AGCCTGTGTC GTGATTGGGA CAGGGATTGG CGGAGCCATG ATTATCAATG GTAGACTTCA    4500

TCGAGGTCGC CACGGTCTGG GTGGAGAATT TGGCTACATG ACAACCCTTG CCCCTGCTGA    4560

AAAACTTAAT AACTGGTCGC AACTAGCATC AACTGGGAAT ATGGTACGAT ACGTGATTGA    4620

AAAATCTGGT CATACTGATT GGGACGGTCG CAAGATTTAC CAAGAGGCCG CAGCTGGTAA    4680

TATCCTTTGT CAAGAAGCCA TTGAGCGCAT GAACCGCAAT CTGGCGCAAG GCTTGCTCAA    4740

TATCCAGTAT CTGATCGATC CAGGTGTCAT CAGTCTGGGT GGCTCTATCA GTCAAAATCC    4800

AGATTTTATC CAAGGTGTCA AGAAGGCTGT TGAAGACTTT GTCGATGCCT ACCAACAATA    4860

CACGGTCGCA CCAGTTATCC AGGCCTGCAC CTATCACGCA GATGCCAATC TCTACGGTGC    4920

TCTTGTCAAC TGGCTACAGG AGGAAAAGCA ATGGTAAGAT TTACAGGACT TAGTCTCAAA    4980

CAAACGCAAG CTATTGAGGT TTTAAAAGGT CACATTTCTC TACCAGATGT GGAAGTGGCT    5040

GTCACTCAGT CTGACCAAGC ATCTATCTCT ATCGAGGGTG AGGAAGGTCA CTATCAATTG    5100

ACCTACCGCA AACCTCACCA ACTTTATCGT GCCTTGTCCT TGTTGGTAAC AGTTCTAGCA    5160

GAAGCTGATA AAGTAGAGAT TGAGGAACAA GCAGCTTACG AAGATTTGGC TTACATGGTT    5220

GACTGTTCTC GAAATGCGGT GCTGAATGTG GCTTCTGCCA AGCAGATGAT TGAGATATTG    5280

GCTCTCATGG GCTACTCAAC CTTTGAGCTT TACATGGAAG ACACTTACCA GATTGAAGGG    5340

CAGCCTTACT TTGGCTATTT CCGTGGAGCT TATTCAGCAG AGGAGTTGCA GGAAATCGAA    5400

GCCTATGCCC AACAGTTTGA CGTGACCTTT GTACCATGCA TCCAGACCTT GGCCCACTTG    5460

TCGGCCTTTG TCAAATGGGG TGTCAAGGAA GTGCAGGAGC TCCGTGATGT AGAGGACATT    5520

CTTCTCATTG GCGAAGAAAA GGTTTATGAC TTGATTGATG GCATGTTTGC CACGTTGTCT    5580

AAACTGAAGA CTCGCAAGGT CAATATCGGG ATGGACGAAG CCCACTTGGT TGGTTTGGGA    5640
```

415

```
CGCTACCTGA TTCTGAACGG TGTTGTGGAT CGTAGTCTCC TCATGTGCCA ACACTTGGAG    5700

CGCGTGCTGG ATATTGCTGA CAAATATGGT TTCCACTGCC AGATGTGGAG TGATATGTTC    5760

TTCAAACTCA TGTCAGCGGA TGGCCAGTAC GACCGTGATG TGGAAATTCC AGAGGAAACT    5820

CGTGTCTACC TAGACCGTCT CAAAGACCGT GTGACTCTGG TTTACTGGGA TTATTATCAG    5880

GATAGCGAGG AAAAATACAA CCGTAATTTC CGCAATCATC ACAAGATTAG CCATGACCTT    5940

GCATTTGCAG GGGGAGCTTG GAAGTGGATT GGCTTTACAC CTCACAACCA TTTTAGCCGT    6000

CTAGTGGCTA TCGAGGCTAA TAAAGCCTGC CGTGCCAATC AGATTAAAGA AGTCATCGTA    6060

ACGGGTTGGG GAGACAATGG TGGTGAAACT GCCCAGTTCT CTATCCTACC AAGCTTGCAA    6120

ATCTGGGCAG AACTCAGCTA TCGCAATGAC CTAGATGGTT TGTCTGCGCA CTTCAAGACC    6180

AATACTGGTC TAACGGTTGA GGATTTTATG CAGATTGACC TTGCCAACCT CTTACCAGAC    6240

CTACCAGGCA ATCTCAGCGG TATCAATCCC AACCGCTATG TTTTTTATCA GGATATTCTT    6300

TGTCCGATTC TTGATCAACA CATGACACCT GAACAGGACA AACCGCACTT CGCTCAGGCT    6360

GCTGAGACGC TTGCTAACAT TAAAGAAAAA GCTGGAAACT ATGCCTATCT CTTTGAAACT    6420

CAGGCCCAGT TGAATGCTAT TTTAAGTAGC AAAGTAGATG TGGGACGACG CATTCGTCAG    6480

GCCTACCAAG CGGATGATAA AGAAAGTTTA CAACAAATCG CCAGACAAGA ATTACCAGAA    6540

CTTAGAAGCC AAATTGAAGA CTTCCATGCC CTCTTTAGCC ACCAATGGCT GAAAGAAAAC    6600

AAGGTCTTTG GTTTGGATAC AGTTGACATC CGTATGGGCG GACTCTTGCA ACGCATCAAA    6660

CGAGCAGAAA GCCGTATCGA GGTTTATCTG GCTGGTCAGC TTGACCGCAT CGACGAGCTG    6720

GAAGTTGAAA TCCTACCATT TACTGACTTC TACGCAGACA AGGATTTCGC AGCAACTACA    6780

GCCAACCAGT GGCATACCAT TGCGACAGCG TCGACGATTT ATACGACTTA ATATTCTTCG    6840

AAAATCTCTT CAAACCACGT CAGCTTCCAT CTGCAACCTC AAAACAGTGT TTTGAGCAAC    6900

CTGCAGCTAG CTTCCTAGTT TGCTCTTTGA TTTTCATTGA GTATAAAAAC AAGAACACCT    6960

TGCTTGGCGC AGGGTGTTTC GCGTGAAACA GAAGAATTAT CTGGTTTCAA ATGCTACAGT    7020

TAGACAAACT TATGATAAAA TAGCAGAAAG TGAATGTTTC CTAAGAGCAA TTGGAGGTAT    7080

TATGCTACAC TTAAAATTAG TAAAACAAGA AATAGAAGCT GAAAAGCCAG CATCTGTAGA    7140

AGCTTGGATC ATTTCCGTCA AATTTAAAAA AGGTTGCTAC CGACATATAT AGATTCCAAA    7200

AACAAAAACG TTAGCGGAAC TAGCAGATGT GATTTTATGG AGTTTTGATT TTGCAAATGA    7260

TCATGCTCAC GCATTTTTCA TGGATAATGT TGAGTGGAGT CATGCAGATT CTTACTTTCG    7320

TAGCTTTGTT AGTGACGATG TTGAAGAACT TACACAGAA AATGTCTATC TGGATAGCCT    7380
```

416

```
AAGTGTCAAA CAAAAATTTA AGTTTATTTT CGACTTCGGT GATGAATGGC GTTTTGAATG    7440

CCAAGTGCTG AGAGAAATCG AGACAGAGGA CGAAGAAGCT TATCTCGTAC GTTCGGTTGG    7500

AACGTCGCCA GAACAATATC CAGATTATGA TGGTTTTGAC TATGAAGAAT GGTAAAATTG    7560

AAATCAGTCT GTGTAGGCTT AGTATTTCAA TAGACTTCCT GCAAAACTAG AATCCTAGTT    7620

CATGATTGAT AATACCAGCA ATCAAATTCA TTCGTAATCC GAAGCGTTTA CGATGATTTC    7680

GATAGGTTGT TGAAAACATT TTAAACGTTT TTACTTTGGC AAAGATGTTC TCAACCTTGC    7740

TTCTCTCCTT AGATAGCGCA TGGTTATAGG CTTTATCTTC AGCTGTTAGT GGCTTGAGTT    7800

TGCTGGATTT ACGTGAAGTT TGTGCTTGAG GACATATCTT CATGAGCCCT TGATAACCAC    7860

TGTCAGCCAA GATTTTACCA GCTTGTCCGA TATTTCTGCA ACTCATTTTG AACAACTTCA    7920

TATCATGACA ATAGTTCACA GTGATATCCA AAGAAACAAT TCTCCCTTGA CTTGTGACAA    7980

TCGCTTGAGC CTTCATAGCG TGAAATTTCT TTTTACCAGA ATCATTCGCT AATTCTTTTT    8040

TTAGGGCGAT TGATTTTTAC TTCCGTCGCA TCAATCATTA CCGTGTCCTC AGAACTAAGA    8100

GGAGTTCTTG AAATCGTAAC ACCACTTTGA ACAAGAGTTA CTTCAACCCA TTGGCTCCGA    8160

CGGATTAAGT TGCTTTCGTG AATACCAAAA TCAGCCGCAA TTTCTTCATA AGTGCGGTAT    8220

TCTAGGCTTA ATTTAGGTTT TCGTCCACCT TTTGCGTGTT TAAGTTGATA AGCTGTTTTT    8280

AATACAGCTA ACATCTCTTT AAAAGTCGTG CGCTGAACAC CAACAAGACG CTTAAATCGT    8340

GTATCAGTTA ATTGTTTACT TGCTTCATAA TTTCGCAGGG AGTCTATTGA CTCTTTGGTA    8400

GGTGTCAATG TTTTTTTCAT CTATCCCGAG AATTATTTTC CCGCCATTTG TATTTGCAAA    8460

TGCTGAGTAG GTTTCCCAGA AAGACTCTGG AAGATTGTTT TTAGCTTTTT TGTATTCTAA    8520

ATCAACCCCT TCAAATTTTA AGTCCATATT TTTCCTTTAC ATCTGTTTTT TGTGGTTCTG    8580

GTATTTGTTC AAGTTGAGTG ATAATATAGC GAATTGAATT TCGAGAGTTT TTACTCAGTT    8640

AATTTCTTTT TTAACCC                                                   8657
```

(2) INFORMATION FOR SEQ ID NO: 45:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 11384 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

```
TCTATTTTGG GTATAGACTT ACCTATAAAG AAAAATATCT ATACACTGCC TTACTAGCTA     60

TACTGAACGA GTCAACAAAA ACGATATATA TTGATGATAT AAATACAGCA AGATTTTTTA    120
```

417

```
ACTTCTTTGG CAATGATATT CCTAATTCGT CTTTAAAAAA AATTGACTAT ATCGCACCTT      180

CAGAAATTGT TTCATTTAGT ACGTACGTTC GACAACGTTC TAAAGTAATT CCTAAAATTT      240

TGGAACATAT ATTAAAATCA AGTTTTTTAT TAGAGAATAT AGATGTTTCT GGTTACACTG      300

TAAATATTTT AGAAGATCAA TTAACAAAAC ATAGAACAAT CAAAATTAGT AAAAACTAAC      360

TGGTTGATCT CATGTATAAA TACCTAACAA AACCACGCGC CTTGCCTGCT GATGGAAAGA      420

AAGGTACAAA TACATGAATA TCAAAGAAAA AATCAAAAAG AATGGCCAAA GAGTTTATTA      480

TGCTAGTGTT TATCTAGGCG TTGACCAACT AACGGGCAAA AAAGCCCGTA CAACTGTTAC      540

AGCAACCACT AAAAAGGGCG TTAAAGTAAA AGCGCGTGAT GCGATCAATA CTTTTGCTGC      600

TAATGGCTAT ACAGTTAAAG ACAAGCCGAC AATTACAACA TATAATGAGC TTGTAAAAGT      660

TTGGTGGGAT AGTTACAAGA ATACAGTTAA GCCAAATACT CGCCAATCCA TGGAGGGATT      720

GGTTAGAGTG CATTTATTGC CTGTATTTGG CGATTACAAG CTATCTAAAC TTACTACGCC      780

TATTCTTCAA CAGCAAGTAA ACAAATGGGC TGACAAGGCA AATAAAGGCG AAAAAGGGGC      840

ATTTGCTAAC TACTCTTTGC TCCATAACAT GAATAAGCGT ATTTTGAAAT ATGGCGTAGC      900

TATCCAGGTA ATACAATACA ACCCAGCTAA TGATGTCATC GTTCCACGCA AACAGCAAAA      960

AGAAAAGGCT GCTGTCAAAT ACTTAGACAA CAAAGAATTA AAACAGTTTC TTGATTATTT     1020

AGATGCTCTG GATCAATCAA ATTATGAGAA CTTATTTGAT GTTGTTCTGT ATAAGACTTT     1080

ATTGGCCACT GGTTGCCGTA TTAGTGAGGC TCTGGCTCTT GAATGGTCTG ATATTGACCT     1140

AGAAAGCGGT GTTATCAGCA TCAATAAGAC ACTAAACCGC TATCAGGAAA TAAACTCACC     1200

TAAATCAAGC GCTGGTTATC GTGATATACC AATAGACAAA GCCACATTAC TTTTACTGAA     1260

ACAATACAAA AACCGTCAAC AAATTCAGTC TTGGAAATTA GGCCGATCTG AAACAGTTGT     1320

ATTCTCTGTA TTTACGGAGA AATATGCTTA TGCTTGTAAC TTACGCAAAC GCCTAAATAA     1380

GCATTTTGAT GCTGCTGGAG TAACTAACGT ATCATTTCAT GGTTTCCGCC ATACACATAC     1440

TACTATGATG CTCTATGCTC AGGTTAGCCC GAAAGATGTT CAGTATAGAT TAGGCCACTC     1500

TAATTTAATG ATCACTGAAA ATACTTACTG GCATACTAAC CAAGAGAATG CAAAAAAAGC     1560

CGTCTCAAAT TATGAAACAG CTATCAACAA TTTATAAAAA ATAAGGGTGA CCCATTTCCG     1620

GGCTACCCTC TTACTATACC AAAAATTAGT AGGGGTAGTA AAAAGGGTAT TAAATTATAA     1680

AAAGCACTAA GGGAAAGCGC CCCAAAGTGC TTATTTCAAA GGCTTTATAG CCTATAATCA     1740

CATAAAGAGA TTATTTTTTA AGGTTGTAGA ATGATTTCAA TCCACGATAT TCAGCTACTT     1800

CACCAAGTTG GTCTTCGATA CGAAGCAATT GGTTGTATTT AGCGATGCGG TCTGTACGTG     1860
```

418

```
AAAGTGAACC AGTCTTGATT TGTCCTGCGT TAGTTGCAAC TGCAATATCA GCGATTGTTG      1920

AATCTTCAGT TTCACCTGAA CGGTGTGATA CAACAGCAGT GTAACCAGCT TCTTTAGCCA      1980

TTTCGATAGC TTCAAAAGTT TCAGTAAGAG TACCGATTTG GTTAACTTTG ATAAGGATTG      2040

AGTTAGCAGC ACCTTCTTGG ATACCACGTG CAAGGTAGTC AGTGTTTGTT ACGAAGAAGT      2100

CGTCACCAAC AAGTTGTACT TTCTTACCAA GACGTTCAGT AAGAGCTTTC CAACCATCCC      2160

AGTCGTTTTC ATCCATACCA TCTTCAATAG TGATGATTGG GTATTTGTTA ACCAATTCTT      2220

CAAGGTAGTC GATTTGTTCT GCAGATGTAC GAACAGCAGC ACCTTCACCT TCAAATTTAG      2280

TGTAGTCGTA AACTTTACGT TCTTTATCGT AGAATTCTGA TGAAGCACAC TCAAATCCGA      2340

TAAATACGTC TTTACCTGGT ACATATCCAG CAGCTTCAAT CGCAGCAAGG ATAGTTTCAA      2400

CACCATCTTC AGTTCCTTCG AAACGAGGAG CGAATCCACC TTCGTCACCT ACGGCAGTTT      2460

CCAAACCACG TGATTTAAGG ATTTTCTTAA GAGCGTGGAA GATTTCAGCA CCGTAACGAA      2520

GGGCTTCTTT AAATGTTGGC GCACCAACTG GCAAGATCAT GAACTCTTGG AAAGCGATTG      2580

GAGCGTCAGA GTGAGAACCA CCGTTGATGA TGTTCATCAT TGGAGTTGGA AGAACTTTAG      2640

TGTTGAATCC ACCAAGATAG CTGTAAAGTG GGATTTCAAG GTAGTCAGCA GCAGCACGAG      2700

CTACAGCGAT AGACACACCG AGGATTGCAT TCGCACCCAA TTTACCTTTG TTAGGAGTAC      2760

CGTCAAGTGC GATCATAGCA CGGTCAATAG CTTGTTGATC ACGTACATCG TAGCCAATGA      2820

TAGCTTCAGC AATGATGTTC TTTACGTTGT CAACAGCTTT TTGTGTACCA AGACCACCGT      2880

AACGAGATTT GTCACCGTCG CGAAGTTCAA CTGCTTCGTG TTCACCAGTA GAAGCTCCTG      2940

ATGGAACCAT ACCACGTCCG AAAGCACCTG ATTCAGTGTA AACTTCTACT TCAAGTGTTG      3000

GGTTACCGCG TGAGTCTAGG ACTTCGCGAG CGTAAACATC AGTAATAATT GACATTTTTT      3060

ACTCTCCTTA TGAGTTAAAT TTTTTACACC TCTATAATAC CTTAAAACCC CTCCTTTTTC      3120

AAGAAAAAAC GTTATCTTTG TGCAACTTTT CCTTAACTTT ATAAAGTAAT CGCTTTCTTT      3180

TGTCTGTTTT ATTCTAACTT TTATGATATA CTGTTTTCAT GACAGATTTA TCAAAACAAT      3240

TACTTGAAAA AGCTCATGGT GGGTTAAAAA TAAATCCGGA TGAGCAAAGA CGCTATCTTG      3300

GTACTTTTGA GGAAAGAGTT CTTGGATATG TAGATATTGA CACAGCAAAT AGCCCTCAGT      3360

TAGAAAAAGG CTTTTTATTT ATTTTAGAAA ACCTTCAGGA AAAAGCAGAG CCACTATTTG      3420

TGAAGATTTC ACCAACTATC GAATTTGATA AGCAAGTTTT CTACTTAAAA GAAGCAAAAG      3480

AAACTGATAG TCAAGCCACC ATAGTATCTG AAGAGCATAT TACTTCTCCT TTTGGCCTGG      3540

TTATTCATAG CAATGCACCA GTTCAAGTAG AAGAAAAAGA CCTTCGACTT GCTTTTCCAA      3600

AACTTTGGGA AGTTAAAAAG GAAGAACCAG CCAAAACATC CTTATGGAAG AAATGGTTTA      3660
```

419

```
GCTAAATCTT GCACATATTT AATAAGTGCC CAATATTGGC AGCCGTGCGC TCCAGATAGA    3720

AACTGGCATT TTTCAAACTA TCTTCTAAAG GTTCACTTTT CTCCAAAATA GAAAAGACAG    3780

CTTGGATATT TTCAAATGGT AGGGGAGGTA AATCTTCAGC AAGACTACCG CAAATAGCAA    3840

TAACAGGAAC TCCAACAGGG GTTCTTTTTG CAACACCTAT AGGCGCTTTC CCAGCAAAGC    3900

TTTGACTATC AAGTCTTCCT TCTCCAACAA CAACCAAGTC AGCATCTGAA ACTTTCTTAT    3960

CAAAGTTGAT TAAGTCCAAG CAGGTATCAA TTCCAGACAC GATACTTGCC TGAGCAAAGG    4020

CACACAAACC ACCAGCAAGG CCTCCACCTG CTCCTGCTCC TTTAATTTCT AATGTTGCAG    4080

GTGAGAATTT TTCATAAAAA TCTTGGATCG CCTGATCTAC GACTGCAAAC ATAGTCGGAT    4140

GTAGACCTTT TTGATTGCCA AAAGTGTAAG TCGCACCTTG ATGACCACAT AAGGGACTCA    4200

CGACATCTGC TAAAATATGA ATTTGAACAC CTTCAGGAAT TTTATAGCAA TTTTCTGTTG    4260

AAACAGAAGC TAAGTTTAAT AAGGATTGAC CGGAAGCAGG CAAGACATTT CCATCCCTAT    4320

CATAAAATTG ATAACCTAAA CCAGCAGCAA TCCCCAGTCC TCCATCATTA CTGGCCGTGC    4380

CACCAACACC GATATAAATA TCTTTAATCC CTTTAGAGAT GAGATGAAGA ATCAACTCTC    4440

CAATACCACA AGTTTGGATT TGAAGTGGAT TTCGTTTCTC TAGCGGAATT TTTCCAAGAC    4500

CAACCAAGTC AGCTACTTCA AATAGTGCCA GTTCCCCTTT TTGAAAATAG CGCATGGCTT    4560

CTTTTTGTCC AAAAGGGTCT GTCACTTGGA TCCATTTTTC TTTTAGGTCA AGAGAATGTC    4620

GGATAGCATC TACAGTACCT TCTCCCCCAT CACCAACAGG GCAGAGGAGA CATTCTACAT    4680

CTGCTATCGA TTGTTGGAAG CCTCTTTTTA TTGCTTCAGC TACCTGTTGA GCTGTCAAGC    4740

TTTCCTTAAA CGAATCCGGT GCAATTACAA TCTTCATATT TTCCCTCATT CTAAACAGTC    4800

AATCAAAGGG AGAACTTCTA AAAATCCCT CTTGTCAACA TGATGTGGTA TTTCTTTTTT    4860

GAGCACTTCT TTGGCACAAA AGGCGATTCC TAACTTCGCC GACTTCAACA TTAATAGATT    4920

ATTAACCCCA TCACCGATTG CCACCGTTCT TTCTTTAGAA AGTTTTAGTT TCTTTCTCCA    4980

TTTTTCCAGA GTCTCTTTTT TGACCTGGGG ACTTATAATT TGTCCAACTA ATTTTCCTGT    5040

TAAAAGACCT TCTTTGACTT CAAGCTAGTT GGCAGTGAAA TAGGCAATAC CAAGGGATTT    5100

TGCTAATCTC TCCAACTATT GGTGTAAATC CACCAGACAC CAGACCAACT AGGATGCCAT    5160

TCTTTTGGAG AATAGAGATG AACTCTGGGA CATTTAGCGA TAGATGAATT GAGTTGAAGA    5220

CGTTATCAAA GACCAAAATA GGAAGACCTT CCAACAAGGA CACTCTTTTT CTTAAACTGC    5280

TTTCAAAGAC CAACTCTCCT CGCATTGCTC GACTTGTAAT CTGCGAAATT TCCGCCTCAT    5340

GACCTGCCTC TCTCCCTAAA AGATCAATCA CTTCTTCTAG GATTAAGGTT CCATCTACAT    5400
```

```
                                    420
CCAAAACACA CAAGCCTTTT ACTTGAGACA TCAGTTCTCC TCTCTAAACA GCCTAAAAAT      5460

CGTATGAAGT CATCATACGA TTTTATCTAT TAATTAACTA AACTATGGTA CAAGTCAAGG      5520

TATGACTTGC AGGCTGTATC CCATGAGAAG TCACTCTCCA TAGCTTGTTT TTGTAGGTTT      5580

CTCCAAATGT CTGGATGGTT TCTATACAAG TCCAATGCTG TTTGGAAAGT CCAATTTAAC      5640

CAATAAGGAG ATAGATTGTC AAAGCTAAAG CCAGTACCGC TTCCTTCGAT TGGATTGAAA      5700

GCGCGAACTG TATCTCGCAA GCCTCCAACT TCATGGACCA ATGGCAAGGT TCCATAACGC      5760

ATAGCCATCA TTTGAGACAA GCCACACGGT TCAAAACGAC TTGGCATGAG GAAGAGGTCA      5820

CAAGCAGCGT AGATTCCTG AGCAAGTTTG ACATCAAAAG TGATATTTGT TGATAGCTTG       5880

TCTGGGTAAA TCTGAGCAAA CCATGAGAAA GCTCCTTCAA AGGCTGGATC GCCAGTTCCC      5940

AAAAGAACAA TCTGAACATC TTCTTGCAAG ATATGGTGAA GACTTTCGAC CACCACATCA      6000

AAACCTTTTT GACGTGTCAA ACGAGAAACA ATTCCCACCA GTGGAACGTC TGCTCTAACA      6060

GGCAAGCCAA CTCTTTCTTG CAATTTTGCC TTATTTTTGG CTTTCCCAGA CAAATCTTCC      6120

TGATTGAAAT GATAGTCTAA AAGAGCATCC GTCTGAGGAT TATAAAGATC AGCATCAATC      6180

CCATTCACGA TACCAGATAC TTTACCAGAC TCCATTTTAA GAATCTGATC CAAATTACAT      6240

CCAAACTGAC TAGTCATAAT TTCATGAGCA TAGCTAGGTG AAACGGTTGA AACACGGTTC      6300

GCATAGAGAA TACCTGCCTT CATCCAGTTC AGACAGTTGT TCCATCGAAG GGTGCCATCA      6360

GCGTAACGTT CAAAGCCAAC TCCAAACAAA TCACCCAACA TTCCTTCTGA AAATTGTCCT      6420

TGGAATTCTA AATTATGAAT GGTTAAAACT GTTTCAATGT CCTCATAGGC TTGAATCCAA      6480

CGGTATTTTT CCTTCAACAA GAAAGGAATC ATAGCTGTAT GGTAGTCATG AACATGGAGA      6540

AGATCAGGAA TAAAGTCAAT CCTTTCCATA GCCTCAATGG CAGCCAGTTG GAAAAAGGCA      6600

AAGCGTTCTC CGTCATCAAA ATCACCGTAA ACATGACCAC GGAAGAAATA ATATTGATTG      6660

TCAATAAAGT AGAAGGTTAC ACCATTTAAT ACTGTTTTCT TAATTCCACA ATACTGTCTG      6720

CGCCAACCAA CGCTCACCTC AAAATGAAGC ACATCTTCAA TCTGATTTCC AAATTTAGCC      6780

TCTACCATAT CATAGTAGGG TAAAATCACT GCAACTTCGT GCCCAGCTTT TACCAGTGAT      6840

TTTGGAAGAG CGCCAATGAC GTCTCCCAAA CCACCTGTTT TTGAAAAGGG TGCACCCTCT      6900

GCTGCTACAA ATAAAATTTT CATGAATGAA TATCCTCTGT TACTTTAGCA CCTTTCTTAA      6960

CCACAACTGG ATGTTCTGCA GTTCCTCGAA TCACAACACC ATGCTCAACT TCAACCCCTT      7020

TGTCCAAGAT AGCATATTCG ACCTGAGCCC CTTCTCCAAT AACAACACGA GGGAAGAGCA      7080

GGCTATCTTT AACCAAGCTA TCCTTATGGA CATGAATATT ACGTGATAGA ACAGAATTAG      7140

CTACTTGACC TTCAATAATA CTACCAGAGG CAAACTGAGA AGTGCTTACC TTAGATGTAT      7200
```

421

```
TAGCATAGTA AGTTGGCTCT TCGTTTTTGA CCTTTGTATA AATCTTTTGG TTTGGTGAGA      7260

AAAGAGAATA GAATTTTTGT GATTCAAGCA TATCGATATT CGCTTGATAA TAAGATTTAA      7320

CAGAGTGAAT ATTGGCTAGA TAGCCCGTGT ACTCGTAGGC GAAAGCTCCC TCTTTTACAG      7380

CCAAATCCCG TAAAACATAG CGCAATTTCT CTGGATGTTC TTTTTTAGCT TCTTCTTCCA      7440

AGTGTTCAAT CAACCAAGGT GTATCAACGA CAAAGATATC TGTAGACATA TTGAACGTTT      7500

CAGCTGTTGA CTTGCTATCA AAGAGTTTAT GAGAAAGAAC ATGGTCTGTT TCATCTACAT      7560

CCAAGATTGC ATTTACTTCT GAAATATCTT TCTTAGCTAG TTTTTTATAA ACTACAGTGA      7620

TAGGCTCTTT TGTTGTACTA TGTAGGTGGA AAACTTGGTT CAAATCAATG TTAATAAGAA      7680

CATCGCAGTT GAGGGCAACC GTTTGGTTTG AGCCAGAACG TTTCAAATAA GTAAGAAGCT      7740

GTTGGTAGTA TTCTTTTCCA ACTGTACTAC TTTCTACACG GGTATTGTAA ATTCCTAGAT      7800

AGTAATGGCT AAGAAGGGTT GATAAGCCCC ACTCGCGTCC TGAACGAATA TGGTCAAATA      7860

CTGAGCTGAT ATTATCCTGC TGGAAAATAC CAAAGACACT ACGAACACCT GCATTAGCAA      7920

GGCTTGAAAG TGGGAAGTCA ATCAAACGAT ATTTCCCACC AAATGGCAAA CTTGCTACTG      7980

GACGGTGGTC CGTCAATGTC GACATATTGT GAAAACCAAC TGTATTTCCT AAAATGGCAG      8040

AATATTTATC AATCTTCATC TGTTGCTACC CCCACTACTT CATTATATCC TACAACTTGT      8100

ACTTCATCTG TTCCATCAAT TTCGACACCG TCAGAAATAA TCGCACCTTC ACCAATAATG      8160

GCACGTTTAA TCTTAGCTCC TTGACCAATG ATAGCTCCAC TCATGATAAC TGAATCAAGG      8220

ACTTCCGCTC CTTCGCGAAC TTGCGCGCCT GTTGAAAGGA TAGAATGTTT AACAGTTCCA      8280

TCAACGAAAC ATCCGTCTAC AACTAATGAG TCTTCCACAT GAGCATTTGC CCCGAGGAAG      8340

TTTGGTGGTG AAATCAAGTT TCTTGAGTAA ATCTTCCATT GACGGTTACG ACTATCCAAG      8400

GCATTTCTG GAGAAATATA CTCCATGTTC GCTTCCCAAA GTGACTCAAT AGTACCAACA      8460

TCTTTCCAAT AACCACTAAA TTCGTAAGCA TAAACACTTT CACCTGACTC AAGGTAATTT      8520

GGAATGACAT TTTTACCAAA GTCTGACATG CCAACCTTGC TCTTTTCAGC AGCGACTAAC      8580

ATATTACGAA GGCGTTGCCA ATCAAAAATG TAGATTCCCA TAGAAGCTTT TGTAGATTTA      8640

GGTTGAGCTG GTTTTTCTTC AAATTCAACA ATACGATTGT TAGCATCTGT GTTCATGATA      8700

CCAAAACGGC TTGCTTCTTT AAGAGGGACG TCTAAAACTG CTACTGTCAA GCTGGCATTA      8760

TTATCCTTAT GAGACTGGAG CATATCATCA TAGTCCATTT TGTAGATGTG ATCCCCAGAC      8820

AAAATCAAGA CATACTCAGG ATTGACACTG TCGATATAGT CGATATTTTG GTAAATAGCG      8880

TGACTAGTCC CCTCAAACCA ACGATTTCCT TCACTTGCAG AATAAGGTTG AAGAATAGAG      8940
```

422

```
ACACCTGAAT TAATACCGTC TAGTCCCCAG CTTGAACCAT TCCCAATATG GTTGTTGAGA    9000

GCAAGTGGTT GATACTGTGT AACGACCCCA ACATTGTGAA TCCCTGAGTT GGCACAGTTT    9060

GATAGGGCAA AGTCAATGAT ACGGTAGCGC CCACCAAATT GCACAGCTGG TTTTGCGATG    9120

CTTTGAGTGA GTTTACCGAG ACGAGTTCCT TGCCCACCAG CAAGAATCAA AGCTAACATT    9180

TCATTTTTCA TTTTCTACTC CTTTTTGGTT TTTATTTGTG ACGGTTTTAG TAGATTTCAA    9240

GCGACGTTTG ATTTTCCATA CACTTGCTCC CATAGCCGGT AGGGTAAAGG TTAAGGTCTG    9300

CTCATAATCT TTCCATAGTC CTTCTTGCGT TTGAACAGTT TGATTATGTT CTTTCCAAAC    9360

GCCTCCCCAC TCTTCCAACT CAGTATTCCA TACTTCTTCG TAAATTCCTG CAACGGGTAG    9420

TCCGATTGTA AAATCTTTCC GCTCAACAGG TACCATATTA AAGATACAGA CTAACATTTC    9480

TCCCTTTTTA CCCTTACGAA TAAAGGAAAG AACACTCTGG TCTCGATTAT CCGCATCAAT    9540

GATTTCAATA CCATCATAGC TGGTATCAAT TTCCCACAGA CAGCGATGAT CTTTGTAAAA    9600

CTGGTTTAGC TGAGAAGCGA AATACTTCAT CTTAGCATTC ATTGGGTCTT CTAGGTTAGA    9660

CCATTCCAAC TGTTCTTCAG ATTTCCATTC TAGGAATTGA CCGTATTCGC TACCCATGAA    9720

GAGCAATTTC TTACCAGGGT GACAAATTTG GTACGTATAG AGATTGCGCA AGCCTGCGAA    9780

TTGATTGTAA CGATCTCCCC ACATCTTATG CATCATACTC TTCTTGCCAT GAACCACTTC    9840

ATCGTGCGAG AATGGCAAGA GATAATTCTC CTTGAAAACA TACATAAAGC TGAAAGTCAC    9900

CAGGTTAAAG TCATATTTAC GATAGATCGG ATCTTCTTCG TAGAAACGGA GGATATCATT    9960

CATCCAGCCC ATGTTCCATT TGTAGTCAAA TCCTAGACCA CCAATCTCTT TCATTCCCGT    10020

AATCTTGATC GCAGACGAAC TTTCTTCTGC AATCATCATC ACATCTGGAT ATTCTAACTT    10080

AATAACCTCA TTCAAGCGCT GAAGGAAATA ATAACCTTCA TAGTTGAGAT TTCCGCCATC    10140

TTTATTAGGT GTCCATGGAG CATCATCATA GTCCAAATAG AGCATGTTGC TAACAGCATC    10200

CACACGAATA CCATCCAAAT GATAGACATC AATCCAATGC TTAATGCAAG AAATTAAGAA    10260

GGACTGGACT TCATTTTTTC CAAGGTCAAA ATTAAGGGCA CCCCAACCAT GGTTATGAGC    10320

CTTATTATGG TCTTGGTATT CAAAAGTCGG TGTCCCATCA TAATAGGCTA AGGCATCATC    10380

GTTGATGGTA AAGTGACTGG TACCCAGTCC ACAATAACCC CAATATTATG GGTATGACAC    10440

TCCTCGACAA AATCTTGAAA CTCCTCTGGT CGGCCATAAG CATGCTCTAA AGCGAAGTAA    10500

CCCATAAGCT GATACCCCCA ACTCAAGCCC AAAGGATGGG ACATCAAGGG CATAAACTCA    10560

ATATGAGTAT AGTTCATTTC AACGAGATAA GGAATGAGTT CATCCTTGAG CTGGGCAAAA    10620

CTATAAGGAC TGCCATCAGA ATTTCTTTTC CATGATCCAG CGTGAACTTC ATAAATATTG    10680

ACAGGACGCT CTTCAAAGCC CCAACGTTTT CTTCGTGCCA GCCAAAGTCC ATCCTTCCAT    10740
```

423

```
TTCTTCTCAG GAAGCTCTGT TACGATTGCC CCTGTTCCTG GACGAGCCTC ATACCTGACA    10800

GCAAAAGGGT CAATCTTCAT CAGTTGATGA CCATTTTGAC GTGTGACATG ATATTTGTAA    10860

ATATGCCCTT CTTGAGCCAT ATTGGTAAAG ACTTCCCAGA CCCCAAAATC ATTTCTTACC    10920

ATTGGAATCT GATTTTCAAT CCAGTTGGTA AAATCACCAA CCAAGTGAAC AGCCTGAGCA    10980

TTAGGTGCCC AAACACGGAA GGTATAGCCA TGCTCTCCAT TTAGTTCTTC CCTATGTGCT    11040

CCTAGATAAT GTTGGAGATA AAAATTTTCA CCCGTCATAA AGGTTTTTAA TGCTTCTCTA    11100

TTATCCATAT ACTCCCCTTC TCCTGTAAGC GTTTTCTATG TTTTTATTAT ACTACCTTTT    11160

TAGAGAAGAT TCAAGTAAAT TACTATACTT CTTTAATTAT TTTGAAAATC TACAACAAGT    11220

TCACTTACTC GTTCAATTGT AAATCAATAT TTTTTCAAAA AATTGCGAAA ACGCCTTTCT    11280

TTTTCTACTA TAGTGAAATG AAATAAAACA TGCGCAAATC GATTAAGGAA TTTAATCTAA    11340

TTTCTAACAA TGTCTTAGAA ATCAAAGTGT ACTATTTTAA CTCC                      11384
```

(2) INFORMATION FOR SEQ ID NO: 46:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 7577 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

```
TGTTGATTTG TTACTAGACG TTGACCAACG TCCTTCGGCT GGAAAAGGAA TTCTCCTTAG     60

TTTCCAACAC GTTTTCGCCA TGTTTGGTGC GACCATCTTG GTACCATTGA TTTTGGGAAT    120

GCCTGTATCT GTTGCCCTTT TTGCTTCAGG TGTTGGAACA CTCATCTACA TGATTGCTAC    180

TGGTTTTAAA GTTCCAGTTT ATCTAGGTTC TTCATTTGCC TTTATCACAG CTATGTCACT    240

GGCTATGAAA GAAATGGGGG GGGATGTATC TGCTGCCCAA ACAGGGGTTA TCTTGACTGG    300

TTTGGTCTAT GTCCTTGTTG CTACCAGCAT CCGATTTGTA GGAACAAAAT GGATTGATAA    360

ACTCTTGCCA CCAATCATTA TCGGTCCTAT GATCATCGTT ATCGGTCTTG GACTTGCAGG    420

TTCAGCTGTT ACCAATGCAG GTCTTGTAGC AGACGGAAAT TGGAAAAATG CTCTGGTAGC    480

CGTTGTTACT TTCCTAATTG CTGCCTTTAT CAATACAAAA GGAAAAGGCT TCCTACGAAT    540

CATTCCATTC CTCTTTGCCA TTATCGGTGG TTACCTTTTC GCACTAACTC TTGGCTTGGT    600

TGACTTTACA CCAGTTCTTA AAGCCAACTG GTTCGAAATT CCTGGTTTCT ACTTGCCATT    660

TAGCACAGGT GGTGCCTTTA AAGAGTACAA TCTTTACTTT GGTCCAGAAG CCATCGCTAT    720
```

424

```
CTTGCCAATC GCTATCGTAA CAATTTCTGA ACATATCGGA GACCATACTG TTTTGGGTCA        780

AATCTGTGGT CGTCAATTCT TAAAAGAACC AGGTCTTCAC CGTACTCTTC TTGGTGACGG        840

TATCGCAACT TCTGTTTCTG CCTTCCTTGG TGGACCAGCC AATACAACTT ACGGAGAAAA        900

TACAGGGGTT ATCGGTATGA CTCGTATCGC TTCTGTCTCA GTTATCCGTA ACGCTGCCTT        960

CATCGCGATT GCCCTCAGCT TCCTTGGTAA ATTCACTGCC TTGATTTCAA CTATTCCAAA       1020

CGCTGTACTT GGTGGTATGT CAATCCTTCT CTATGGGGTT ATCGCCAGCA ATGGTTTGAA       1080

AGTCTTGATT AAAGAACGTG TTGATTTCGC TCAAATGCGA AACCTCATCA TCGCAAGTGC       1140

TATGTTGGTT CTTGGACTTG GAGGAGCTAT CCTTAAACTT GGTCCAGTTA CACTTTCAGG       1200

TACTGCCCTT TCAGCCATGA CAGGAATCAT CTTGAACTTG ATCTTGCCAT ACGAAAATAA       1260

AGACTAAGAG TCTAAATACA CCTAATCCAC TCAGACAGCT GAGTGGATTT TTCGTATACC       1320

ATAATAAAAG TGTCTTAACA AAATTATTAA AATCAAAAAA CGTATAATAT CAGATATTCT       1380

AAAACCTTGA TACTGTACGT TTTATCATAG AAATTTTTAC TTTATTTTCT CATCAAATGA       1440

GATTTGCATC AATCTCTTGT CTTACTTGCG TTTCTTCTTC GCTTTCTTCA TTTTGTTAGC       1500

CATACGTTTC ATGGACTGTT TCATGGCAAA TTCACCAATT TTACCTTTCA AACCGCCACC       1560

AAACATCTGG CTCATATCTG GCATTCCTGC TCCTCCGAGA GCTGATAAGT CAGGCATACC       1620

GCCTTGTCCC ATCATTCCTT CAAGGGCAGA CATATCCATT CCTCCCATAT TTGGCATATT       1680

TTTAGCAACG TTATTTGGAT TAATCCCCAT TTGCTTCATC ATTTTATTCA TATCCCCAGA       1740

CATAACACCC TGCATGAGCT GTTTAGCCTG GTTAAAGTCC TTGATGAATT TATTGACTTC       1800

GACGAATGTA TTTCCAGAAC CAGCAGCAAT ACGACGGCGA CGGCTTGGAT TTAACAAATC       1860

TGGGTTTTCA CGCTCTTCAG GTGTCATCGA AGACACAATG GCACGTTTAC GAGCAATCTG       1920

GCGTTCATCC ACCTTCATGT TTTGAAGGGC TGGATTGTTG GCCATACCTG GAATCATCTT       1980

GAGCAAGTCT TCCATCGGCC CCATATTTTG CACCTGATCT AATTGATCGA TGAAATCATT       2040

AAAATCAAAG GTGTTTTCGC GCATCTTCTC AGCCATTTCA AGGGCTTTTT GTTCATCGTA       2100

TTCCTGAGAA GCTTTCTCAA TCAAAGTGAG CATATCCCCC ATACCAAGGA TACGGCTAGA       2160

CATGCGGTCT GGGTGGAAGG TTTCAATGTC CGTAATCTTT TCACCTGTAC CAGTGAACTT       2220

GATTGGTTTT CCAGTAATGT GACGAACAGA CAGAGCAGCA CCACCACGAG TATCGCCATC       2280

AATCTTGGTA AGGATGACCC CAGTCACTTC CAACTGAGCA TTAAACTCAC GCGCAACATT       2340

GGCTGCTTCC TGACCAATCA TAGCATCAAC GACAAGCAAG ATTTCATTTG GTTGAGCCAA       2400

TGCTTTCACA TCACGAAGCT CATTCATGAG GAGCTCATCA ATCTGCAAAC GACCCGCAGT       2460

ATCAATCAAG ACATAGTCGT TATGATTAGT TTGGGCTTGC TCCAAACCTT GACGTACAAT       2520
```

425

```
CTCAACAGCT GGTACTTCTG TTCCAAGTGC AAAGACAGGC ACATCAATCT GTTGTCCCAA    2580

GGTCTTAAGC TGGTCAATGG CAGCTGGACG ATAAATATCC GCCGCAATCA TCAAAGGACG    2640

AGCATTTTCT TCTTTCTTGA GTTTGTTGGC CAATTTACCA GCAAAGGTTG TTTTACCAGC    2700

CCCTTGTAAA CCAACCATCA TGATGATGGT TGGAATCTTA GGTGACTTGA TAATTTCTGC    2760

CGTATCAGAA CCTAAAACGG CTGTCAATTC CTCATCAACG ATTTTAATAA TCTGTTGCGC    2820

AGGATTAAGT GTATCAATGA CCTCATGCCC GACTGCACGC TCACGAACTT TCTTGATAAA    2880

GTCCTTTACA ACAGGCAAGG CAACGTCGGC CTCGAGCAAG GCCAAGCGAA TTTCTTTGGT    2940

TGCCTCTTGG ACATCAGATT CAGAGATTTT TCCTTTTTTA CGTAGATTTT TAAAGACGTT    3000

CTGCAAACGT TCTGTTAAAC TTTCAAATGC CATTTTTCTT CCTCTTATTC TCTATTATCA    3060

ATGCTTGTTA AAATTTCTAT CTGCTCCTGC AGAAAGTCAT CCTTGGGATA GCGCTCCAAA    3120

ATCTGATCAA AAATCTGACT GCGGACAATA TAGTCCGAGT ACATGTGCAA TTTCATCTCA    3180

TAATCTTCCA GAATCTTTTC TGTTCGCTTG ATATTGTCAT AGACAGCCTG ACGACTGACA    3240

CCGAACTCCT CGGCAATTTC AGCAAGGCTG TAATCATCAG CGTAGTAGAG CTCGATATAA    3300

TTCATTTGCT TATCTGTCAA AAGCGCCGCA TAAAATTCAA AGAGCGCATT CATACGATTG    3360

GTTTTTTCGA TTTCCATAAC TTTTATTATA CCAAAAATTA GCCTAATCTA CCACACTAGG    3420

AAGCCGATCC AAGAAGATAG ATAGCTAAAT TTGAAAAAGA CATGAGCCTA GCCCCAAGTA    3480

ATTTCCAATT GATAGCTGGC AAAGGGATGT CCCTCTTGAT TTTGTAGTTG ATAATCTAGT    3540

TCAATCTTTT GCCTATCAAC TTGATAATGG CTCGTTTGGA TGATAAACTC CTGCATGCCC    3600

ATAGGTGTAG GAATATAGGC TAAACTATCG CTATCCTTTA GAAAGCGCAT AATGGTCTTG    3660

GGATTAGAAA ATCGGCTCAT CACAAGTTCT TGACCATGAA ATTTAATCAC TACTTTTTCC    3720

TTTTCCTCAT TATAGAAAAG CAGGTAGCTA TAATCTCCTT TTTCATGCAC TTCCACATCA    3780

TAAAGCTGGT CAATCACTTC CAACTGCTCA TCAAACTGAA TCGTATTTCG CATCCGAATC    3840

TTCACATCAG GCCCTCTTTC TTGTCTCTTG TCCTACTATT TTACCAAAAA GAGCAGGATT    3900

TTGCTATAAT GGTCATATGA ACGAAAAAGT ATTCCGTGAC CCTGTTCACA ACTACATCCA    3960

TGTCAATAAT CAAATCATCT ATGACTTGAT TAATACAAAA GAATTTCAGC GTTTGCGCCG    4020

GATCAAACAA CTGGGAACTT CCAGTTATAC CTTCCACGGT GGAGAACACA GTCGCTTCTC    4080

TCACTGTCTA GGAGTCTATG AAAATTGCACG ACGCATCACA GAGATTTTCG AAGAAAAATA    4140

TCCTGAGGAA TGGAATCCTG CCGAGTCTCT CTTGACCATG ACCGCTGCTC TCCTACACGA    4200

CCTTGGGCAT GGTGCCTACT CCCATACTTT TGAACATCTC TTTGATACAG ACCATGAAGC    4260
```

426

```
CATTACTCAG GAGATTATTC AAAATCCTGA GACAGAGATT CACCAAGTCC TGCTACAAGT    4320

GGCACCTGAT TTCCCAGAAA AGGTGGCCAG TGTCATTGAC CATACCTATC CTAATAAGCA    4380

GGTCGTGCAG CTCATTTCTA GTCAGATTGA CGCAGATCGC ATGGACTATC TCTTGCGCGA    4440

CTCCTATTTT ACAGGAGCAT CCTATGGGGA ATTTGACCTG ACTCGAATCC TCCGAGTCAT    4500

TCGTCCTATC GAAAATGGTA TCGCCTTTCA GCGCAATGGC ATGCACGCCA TCGAAGACTA    4560

CGTCCTCAGT CGCTACCAGA TGTACATGCA GGTTTATTTC CACCCCGCAA CACGCGCCAT    4620

GGAAGTTCTC CTACAGAATC TTCTCAAACG CGCCAAGGAA CTCTATCCTG AGGACAAGGA    4680

TTTCTTTGCC CGAACTTCTC CACACCTCCT GCCTTTCTTC GAAAAAAATG TGACCTTGAC    4740

TGACTATCTG GCTCTGGATG ATGGCGTGAT GAATACCTAC TTCCAGCTTT GGATGACCAG    4800

TCCTGACAAG ATTCTTGCAG ATTTATCGCA TCGCTTTGTC AACCGCAAGG TCTTTAAATC    4860

CATTACCTTT TCACAAGAGG ACCAAGATCA ACTTACTAGC ATGAGAAAAT TGGTTGAGGA    4920

TATCGGCTTT GATCCCGACT ACTACACTGC CATTCATAAG AACTTTGACC TCCCTTATGA    4980

TATCTATCGT CCCGAATCTG AAAACCCACG GACACAGATT GAGATTTTAC AAAAAAATGG    5040

AGAACTGGCC GAACTCTCTA GCCTGTCTCC TATCGTCCAA TCCCTTGCTG GCAGTCGCCA    5100

CGGAGATAAT CGCTTTTATT TTCCAAAAGA AATGTTGGAC CAAAACAGCA TCTTTGCAAG    5160

CATTACCCAG CAATTTTTAC ACTTGATTGA GAACGATCAT TTTACCCCAA ATAAAAACTA    5220

GAAGAGGAAA TTTATGAGTA TTAAACTAAT TGCCGTTGAT ATCGACGGAA CCCTTGTCAA    5280

CAGCCAAAAG GAAATCACTC CTGAAGTTTT TTCTGCCATC CAAGATGCCA AAGAAGCTGG    5340

TGTCAAAGTC GTGATTGCAA CTGGCCGCCC TATCGCAGGC GTTGCCAAAC TTCTAGACGA    5400

CTTGCAGTTG AGAGACGAGG GGGACTATGT GGTAACCTTC AACGGTGCCC TTGTCCAAGA    5460

AACTGCTACA GGACATGAGA TTATCAGCGA ATCCTTGACT TATGAGGATT ATCTAGATAT    5520

GGAATTCCTC AGTCGCAAGC TCGGTGTCCA CATGCATGCC ATTACCAAGG ACGGTATCTA    5580

TACTGCAAAT CGCAATATCG GAAAATACAC TGTACACGAA TCAACCCTCG TCAGCATGCC    5640

TATCTTCTAC CGTACCCCTG AAGAAATGGC TGGCAAAGAA ATTGTTAAAT GTATGTTTAT    5700

CGATGAACCA GAAATTCTCG ATGCTGCGAT TGAAAAAATT CCAGCAGAAT TTTACGAGCG    5760

CTACTCCATC AACAAATCTG CTCCTTTCTA CCTCGAACTC CTTAAAAAGA ATGTAGACAA    5820

GGGTTCAGCC ATTACTCACT TGGCTGAAAA ACTCGGATTG ACCAAAGATG AAACCATGGC    5880

AATCGGTGAT GAAGAAAATG ACCGTGCCAT GCTGGAAGTC GTTGGAAACC CCGTTGTCAT    5940

GGAAAATGGA AATCCAGAAA TCAAAAAAAT CGCCAAATAC ATCACCAAAA CAAATGACGA    6000

ATCCGGCGTT GCCCATGCCA TCCGAACATG GGTACTGTAA AAGTATCATT TTTCAATAAG    6060
```

427

```
AATTGATTAG CAATAAAATC CAATGAATTT TTTTAGCAAA CTATTTAATT TAAAACAAAA    6120

TAATCATAAT AGAGACACAA ATTCTGATTG TAACAATTTT TACCTAAACG AATTAGAATG    6180

TGGCCTTACT CCTGGGCAAC TCATACTCAT AGATTGGACT CAAAAAACAG GGAGAAATTA    6240

TAATTCCCCA AGATATTTTA AATACTCTCT TCAAATTGAC CCTGAATCTA CACACAATCA    6300

ATTATACAAA TTAGGATACT TCACTAAAAA TAAGACTTTA TCATATCTTA CAGTAGTAGA    6360

ATTAAAAACT ATATTATCTA AACATAATTT AGCTACTTCT GGAAAAAAAG CAGAATTAAT    6420

TACAAGAATA ATTAATAATG TTAACATTGA CAATTTAGAT ATTCCGTTCG AATTTAAACT    6480

AACAAAAGAA GCACAAAATC TTATTATCGA ACATAGTGAC TATATCAAAG CATACTATGA    6540

TAAAGACATA ACTATGGAAG ATTATTGTAA AGAAAAAAAC AATATCTCTT TTAAAGCAAC    6600

TTTTGGTGAT ATAAAATGGA GTCTCTTAAA TAAACAAGCT CATAGGAATA CTGTATCAGG    6660

AGATTTTGGA TGCTTATCTA ACACACGAAA GGCTCAGGGA AGACATTTGG AACAAGAAGG    6720

TAATATTAAA CATGCTTTAA TATATTACAT AGAATCTTTG ATAATTACTA TTTCAGGATT    6780

AGAAACAAT TTTTCAGCCA CTGATTATCC AGTATATTAT CCCGATTCGA TACCTGACTA    6840

CTCACTAAAA CATATTCAAA CATTAATGGA ATCATTATCT GATGACGATT ATGATTTTGC    6900

TTTTGATGAA GCATTATTTC GCTTCTCAAT TTTGAATGCA AATCATTTTT TATCTAAGGA    6960

AGATATTGAC TATTTAAGAG TTAATTTACC TCGTTCCACT GCTGAAGAAA TAAACAATTA    7020

CTTAAAGAAA TATGAATGTT ATAGTCCTTT AAATAATTTA GAACTTGACG ATTTTGAATA    7080

AATTGACTAT ACAAACATTT ATATACTCGA TATAGTCTCA ATTTTATCTG ATGATTGCCC    7140

AAATTTTTCA ATAATAAAAC GCATAATATT ATGGAGACAA TCCCCTATAT TATGCGTTCT    7200

TTTAATATCA AAGACTTTTT GACAAACTTC TTTGATATCT AATTACATGC CCCCTGCAGG    7260

AATCGAACCT GCAACTACTC CTTAGGAGGG AGTTGTTATA TCCATTGAAC TAAGGGAGCT    7320

AGATAAAAAC TCTGCTAAAT GAGCAGAGTT TTTTAGTCGA ATTAACGACG GATTTCTTTG    7380

ATACGAGCTG CTTTACCTTG AAGAGCACGC AAGTAGTACA ATTTCGCACG ACGTACTTTA    7440

CCGTAACGAA CAACTTCGAT TTTTTCAACA CGTGGAGTGT GGATTGGGAA GATACGCTCA    7500

ACACCTACAC CGTTAGAGAT TTTACGAACT GTGTAGTTTT CTGAGATTCC AGCACCTTTA    7560

CGTGCGATAA CAACACG                                                   7577
```

(2) INFORMATION FOR SEQ ID NO: 47:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 4945 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double

428

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

```
CCTCGCTGAT GATTGGTGCT GTTTTATTTG CTGGTCCAGC CTTGGCTGAA GAAACTGCAG         60

TTCCTGAAAA TAGCGGAnCT AATACAGAGC TTGTTTCAGG AGAGAGTGAG CATTCGACCA        120

ATGAAGCTGA TAAGCAGAAT GAAGGGGAAC ATGCTAGAGA AAACAAGCTA GAAAAGGCAG        180

AAGGAGTAGC GATAGCATCT GAAACTGCTT CGCCAGCAAG CAATGAAGCT GCAACTACTG        240

AAACTGCAGA AGCAGCTAGC GCAGCTAAAC CAGAGGAAAA AGCAAGTGAG GTGGTTGCAG        300

AAACACCATC TGCAGAAGCA AAACCTAAGT CTGACAAGGA AACAGAAGCA AAGCCCGAAG        360

CAACTAACCA AGGGGATGAG TCTAAACCAG CAGCAGAAGC TAATAAGACT GAAAAAGAAG        420

TCCAGCCAGA TGTCCCTAAA AATACAGAAA AAACATTAAA ACCAAAGGAA ATCAAATTTA        480

ATTCTTGGGA AGAATTGTTA AAATGGGAAC CAGGTGCTCG TGAAGATGAT GCTATTAACC        540

GCGGATCTGT TGTCCTCGCT TCACGTCGGA CAGGTCATTT AGTCAATGAA AAAGCTAGCA        600

AGGAAGCAAA AGTTCAAGCC TTATCAAACA CCAATTCTAA AGCAAAAGAC CATGCTTCTG        660

TTGGTGGAGA AGAGTTCAAG GCCTATGCTT TTGACTATTG GCAATATCTA GATTCAATGG        720

TCTTCTGGGA AGGTCTCGTA CCAACTCCTG ACGTTATTGA TGCAGGTCAC CGTAACGGGG        780

TTCCTGTATA CGGTACACTC TTCTTCAACT GGTCTAATAG TATTGCAGAT CAAGAAAGAT        840

TTGCTGAAGC TTTGAAGCAA GACGCAGATG GTAGCTTCCC AATTGCCCGT AAATTGGTAG        900

ACATGGCCAA GTATTATGGC TATGATGGCT ATTTCATCAA CCAAGAAACA ACTGGAGATT        960

TGGTTAAACC TCTTGGAGAA AAGATGCGCC AGTTTATGCT CTATAGCAAG GAATATGCTG       1020

CTAAGGTAAA CCATCCAATC AAGTATTCTT GGTACGATGC CATGACCTAT AACTATGGAC       1080

GTTATCATCA AGATGGTTTG GGAGAATACA ACTACCAATT CATGCAACCA GAAGGAGATA       1140

AGGTTCCGGC AGATAACTTC TTTGCTAACT TTAACTGGGA TAAGGCTAAA AATGATTACA       1200

CTATTGCAAC TGCCAACTGG ATTGGTCGTA ATCCTTATGA TGTATTTGCA GGTTTGGAAT       1260

TGCAACAGGG TGGTTCCTAC AAGACAAAGG TTAAGTGGAA TGACATTTTA GACGAAAATG       1320

GGAAATTGCG CCTTTCTCTT GGTTTATTTG CCCCAGATAC CATTACAAGT TTAGGAAAAA       1380

CTGGTGAAGA TTATCATAAA AATGAAGATA TCTTCTTTAC AGGTTATCAA GGAGACCCTA       1440

CTGGCCAAAA ACCAGGTGAC AAAGATTGGT ATGGTATTGC TAACCTAGTT GCGGACCGTA       1500

CGCCAGCGGT AGGTAATACT TTTACTACTT CTTTTAATAC AGGTCATGGT AAAAAATGGT       1560

TCGTAGATGG TAAGGTTTCT AAGGATTCTG AGTGGAATTA TCGTTCAGTA TCAGGTGTTC       1620
```

429

```
TTCCAACATG GCGCTGGTGG CAGACTTCAA CAGGGGAAAA ACTTCGTGCA GAATATGATT    1680

TTACAGATGC CTATAATGGC GGAAATTCCC TTAAATTCTC TGGTGATGTA GCCGGTAAGA    1740

CAGATCAGGA TGTGAGACTT TATTCTACTA AGTTAGAAGT AACTGAGAAG ACCAAACTTC    1800

GTGTTGCCCA CAAGGGAGGA AAAGGTTCTA AAGTTTATAT GGCATTCTCT ACAACTCCAG    1860

ACTACAAATT CGATGATGCA GATGCATGGA AAGAGCTAAC CCTTTCTGAC AACTGGACAA    1920

ATGAAGAATT TGATCTTAGC TCACTAGCGG GTAAAACCAT CTATGCAGTC AAACTATTTT    1980

TCGAGCATGA AGGTGCTGTA AAAGATTATC AGTTTAACCT AGGACAATTA ACTATCTCGG    2040

ACAATCACCA AGAGCCACAA TCGCCGACAA GCTTTTCTGT AGTGAAACAA TCTCTTAAAA    2100

ATGCCCAAGA AGCGGAAGCA GTTGTGCAAT TTAAAGGCAA CAAGGATGCA GATTTCTATG    2160

AAGTTTATGA AAAAGATGGA GACAGCTGGA AATTACTAAC TGGCTCATCT TCTACAACTA    2220

TTTATCTACC AAAAGTTAGC CGCTCAGCAA GTGCTCAGGG TACAACTCAA GAACTGAAGG    2280

TTGTAGCAGT CGGTAAAAAT GGAGTTCGTT CAGAAGCTGC AACCACAACC TTTGATTGGG    2340

GTATGACTGT AAAAGATACC AGCCTACCAA AACCACTAGC TGAAAATATC GTTCCAGGTG    2400

CAACAGTTAT TGATAGTACT TTCCCTAAGA CTGAAGGTGG AGAAGGTATT GAAGGTATGT    2460

TGAACGGTAC CATTACTAGC TTGTCAGATA AATGGTCTTC AGCTCAGTTG AGTGGTAGTG    2520

TGGATATTCG TTTGACCAAG CCACGTACCG TTGTTAGATG GGTCATGGAT CATGCAGGAG    2580

CTGGTGGTGA GTCTGTTAAC GATGGCTTGA TGAACACTAA AGACTTTGAC CTTTATTATA    2640

AAGATGCAGA TGGTGAGTGG AAGCTAGCTA AGGAAGTCCG TGGTAACAAA GCACACGTGA    2700

CAGATATCAC TCTTGATAAA CCAATCACTG CTCAAGACTG GCGCTTGAAT GTTGTCACTT    2760

CTGACAATGG AACTCCATGG AAGGCTATTC GTATCTATAA CTGGAAAATG TATGAAAAGC    2820

TTGATACTGA GAGTGTCAAT ATTCCGATGG CCAAGGCTGC AGCCCGTTCT CTAGGCAATA    2880

ACAAGGTACA AGTTGGCTTT GCAGATGTAC CGGCTGGAGC AACTATTACC GTTTATGATA    2940

ATCCAAATTC TCAAACTCCG CTCGCAACCT TGAAGAGCGA AGTTGGAGGA GACCTAGCAA    3000

GTGCACCATT GGATTTGACA AATCAATCTG GTCTTCTTTA TTATCGTACC CAGTTGCCAG    3060

GCAAGGAAAT TAGTAATGTC CTAGCAGTTT CCGTTCCAAA AGATGACAGA AGAATCAAGT    3120

CAGTCAGCCT AGAAACAGGA CCTAAGAAAA CAAGCTACGC CGAAGGGGAG GATTTGGACC    3180

TTAGAGGTGG TGTTCTTCGA GTTCAGTATG AAGGAGGAAC TGAGGACGAA CTCATTCGCC    3240

TAACTCACGC AGGTGTATCA GTATCAGGTT TTGATACGCA TCATAAGGGA GAACAGAATC    3300

TTACTCTCCA ATATTTGGGA CAACCGGTAA ATGCTAATTT GTCAGTGACT GTCACTGGCC    3360
```

430

```
AAGACGAAGC AAGTCCGAAA ACTATTTTGG GAATTGAAGT AAGTCAGGAA CCGAAAAAAG    3420

ATTACCTAGT TGGTGATAGC TTAGACTTGT CTGAAGGACG CTTTGCAGTG GCTTATAGCA    3480

ATGACACCAT GGAAGAACAT TCCTTTACTG ATGAGGGAGT TGAAATTTCT GGTTACGATG    3540

CTCAAAAGAC TGGTCGTCAA ACCTTGACGC TTCATTACCA AGGCCATGAA GTTAGCTTTG    3600

ATGTTTTGGT ATCTCCAAAA GCAGCATTGA ACGATGAGTA CCTCAAACAA AAATTAGCAG    3660

AAGTTGAAGC TGCTAAGAAC AAGGTGGTCT ATAACTTTGC TTCATCAGAA GTAAAAGAAG    3720

CCTTCTTGAA AGCAATTGAA GCGGCCGAAC AAGTGTTGAA AGACCATGAA ACTAGCACCC    3780

AAGATCAAGT CAATGACCGA CTTAATAAAT TGACAGAAGC TCATAAAGCT CTGAATGGTC    3840

AAGAGAAATT TACGGAAGAA AAGACAGAGC TTGATCGCTT AACAGGTGAG GTTCAAGAAC    3900

TCTTGGCTGC CAAACCAAAC CATCCTTCAG GTTCTGCCCT AGCTCCGCTT CTTGAGAAAA    3960

ACAAGGCCTT GGTTGAAAAA GTAGATTTGA GTCCAGAAGA GCTTACAACA GCGAAACAGA    4020

GTCTAAAAGA TCTGGTTGCT TTATTGAAAG AAGACAAGCC AGCAGTCTTT TCTGATAGTA    4080

AAACAGGTGT TGAAGTACAC TTCTCAAATA AAGAGAAGAC TGTCATCAAG GGTTTGAAAG    4140

TAGAGCGTGT TCAAGCAAGT GCTGAAGAGA AGAAATACTT TGCTGGAGAA GATGCTCATG    4200

TCTTTGAAAT AGAAGGTTTG GATGAAAAAG GTCAAGATGT TGATCTCTCT TATGCTTCTA    4260

TTGTGAAAAT CCCAATTGAA AAAGATAAGA AAGTTAAGAA AGTATTTTTC TTACCTGAAG    4320

GCAAAGAGGC AGTAGAATTG GCTTTTGAAC AAACGGATAG TCATGTTATC TTTACACCAC    4380

CTCACTTTAC TCATTATGCC TTTGTTTATG AATCTGCTGA AAAACCACAA CCTGCTAAAC    4440

CAGCACCACA AAACACAGTC CTTCCAAAAC CTACTTATCA ACCGACTTCT GATCAACAAA    4500

AGGCTCCTAA ATTGGAAGTT CAAGAGGAAA AGGTTGCCTT TCATCGTCAA GAGCATGAAA    4560

ATACTGAGAT GCTAGTTGGG GAACAACGAG TCATCATACA GGGACGAGAT GGACTGTTAA .  4620

GACATGTCTT TGAAGTTGAT GAAAACGGTC AGCGTCGTCT TCGTTCAACA GAAGTCATCC    4680

AAGAAGCGAT TCCAGAAATT GTTGAAATTG GAACAAAAGT AAAAACAGTA CCAGCAGTAG    4740

TAGCTACACA GGAAAAACCA GCTCAAAATA CAGCAGTTAA ATCAGAAGAA GCAAGCAAAC    4800

AATTGCCAAA TACAGGAACA GCTGATGCTA ATGAAGCCCT AATAGCAGGC TTAGCCAGCC    4860

TTGGTCTTGC TAGTTTAGCC TTGACCTTGA GACGGAAAAG AGAAGATAAA GATTAAATAT    4920

CGAAAAATCT TGTGAAATCT TTCCG                                         4945
```

(2) INFORMATION FOR SEQ ID NO: 48:

     (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 25002 base pairs
          (B) TYPE: nucleic acid

431

(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

GACAACTCAA GTAGCTTTTT CTTATTTTGA AAAAGGAGAT CAGAGTTTAA CTATGTCAGA   60

AAAATCACAA TGGGGGTCGA AACTTGGTTT TATTCTAGCA TCTGCTGGCT GGCCATCGGG   120

CTTGGTTCCG TTTGGAAGTT TCCCTACATG ACTGCTGCTA ATGGCGGTGG AGGCTTTTTA   180

CTAATCTTTC TCATTTCCAC TATTTTAATC GGTTTCCCTC TCCTGCTGGC TGAGTTTGCC   240

CTTGGCCGTA GTGCTGGCGT TTCCGCTATC AAAACCTTTG GAAAACTGGG CAAGAATAAC   300

AAGTACAACT TTATCGGTTG GATTGGCGCC TTTGCCCTCT TTATCCTCTT ATCTTTTTAC   360

AGTGTTATCG GAGGATGGAT TCTAGTCTAT CTAGGTATTG AGTTTGGGAA ATTGTTCCAA   420

CTTGGTGGAA CGGGTGATTA TGCTCAGTTA TTTACTTCAA TCATTTCAAA TCCAGCCATT   480

GCCCTAGGAG CTCAAGCGGC CTTTATCCTA TTGAATATCT TCATTGTATC ACGTGGGGTT   540

CAAAAAGGGA TTGAAAGAGC TTCGAAAGTC ATGATGCCCC TGCTCTTTAT CGTCTTTGTT   600

TTTATCATCG GTCGCTCTCT CAGTTTGCCA AATGCCATGG AAGGGGTTCT TTACTTCCTC   660

AAACCAGACT TTTCAAAACT GACTAGCACT GGTCTCCTCT ATGCTCTGGG ACAATCTTTC   720

TTTGCCCTCT CACTAGGGGT TACAGTCATG TTGACCTATG CTTCTTACTT AGACAAGAAA   780

ACCAATCTAG TCCAGTCAGG AATCTCCATC GTAGCCATGA ATATCTCGAT ATCCATCATG   840

GCAGGTCTAG CCATTTTCCA AGCTCGATCC CCCTTCAATA TCCAGTCTGA AGGGGGACCC   900

AGCCTGCTCT TTATCGTCTT GCCTCAACTC TTTGACAAGA TGCCTTTTGG AACCATTTTC   960

TACGTCCTCT TCCTCTTGCT CTTCCTTTTT GCGACAGTCA CTTTTTCTGT CGTGATGCTG   1020

GAAATCAATG TAGACAATAT CACCAACCAG GATAACAGCA AACGTGCCAA ATGGAGTGTT   1080

ATTTTAGGAA TTTTGACCTT TGTCTTTGGC ATTCCTTCAG CCCTATCTTA CGGTGTCATG   1140

GCGGATGTTC ACATTTTTGG TAAGACCTTC TTTGACGCTA TGGACTTCTT GGTTTCCAAT   1200

CTCCTCATGC CATTTGGAGC TCTCTACCTT TCACTTTTTA CAGGCTATAT CTTTAAAAAG   1260

GCTCTTGCAA TGGAGGAACT CCATCTCGAT GAAAGAGCAT GGAAACAAGG ACTGTTCCAA   1320

GTCTGGCTCT TCCTTCTTCG TTTCTTCGTT TCGTCATTCC AATCATCATC ATTGTGGTCT   1380

TCATTGCCCA ATTTATGTAA TCAAAAAGGA CTTGAGTAGT GAACTCAGGC CCTTTCTTTT   1440

TATGGATGGC TAACAATCAA TTCCAAACCT TGCCCTTCCA GAGTCCAAGC TTCAACATCA   1500

CTTGGTAGGA TAAAGTGGCT GCCTTTTTGA ATTGGATAAT TTTTCCCGTC AACAGTTAGC   1560

432

```
TGACCTTGAC CAGCCAAGAC ACTCAATAAG CTGTAGTCAG CTGTCTTTTC AAAGTCAACT    1620

TTTCCAGTAA TTTCCCACTT GTAAACTGCG AAGAAATCAT TAGATACAAG GAGAGTGGAA    1680

CGCAAATCAT CTGCTTTAAC AGTTACAGGA CGGCTATTTG CTGGCTCACC AATGTTCAAG    1740

ACATCGATGG ATTTTTCAAG ATGAAGTTCA CGCAAGTTGC CTTTGTCATC CTTGCGGTCA    1800

AAGTCATAGA CGCGATAGGT GGTATCGCTA GACTGCTGGG TTTCAAGGAT TAAGATACCC    1860

GCCCCGATAG CGTGCATAGT CCCGCTTGGT ACATAGAAGA AATCTCCAGC CTTAACAGGG    1920

ACTTTGGTCA ACAAGTCATC CCAGTTCTTG TCCTCGATTT GCTGGCGGAG TTCTTCTTTT    1980

GACTTGGCAT TGTGACCGTA GATAATCTCT GAACCTTCAT CCGCTGCGAT AATGTACCAG    2040

CATTCTGTTT TTCCGAGTTC GCCTTCATGC TCGAGTCCAT AAGCATCGTC TGGGTGAACT    2100

TGGACACTGA GCCAGTCGTT GGCATCGAGG ATCTTGGTCA AAAGTGGAAA TACAGGTTCT    2160

GGACGATTGC CAAATAATTC ACGGTGTTCC GCATACAAAG TAGCAAGATC TGTTCCCTCG    2220

TAACGACCAT TGGCAACTTT AGAGACTCCA TTTGGATGGG CTGAGATGGC CCAATATTCT    2280

CCGATTTTTT CACTTGGGAT GTCGTAGCCA AACTCATCAC GTAGCTTGGC TCCACCCCAG    2340

ATTTTTTCTT GCATAACTGA TTGTAAAAAT AATGGTTCTG ACATGTCGAT CTCCTGTCTG    2400

ATTTTTCTCC CCTCATTATA GCAAAAAAAG AGTTCGAATT GAACTCTTTT TTACATCTTA    2460

TAAAGCAGGG AGAAGATTTT ATAAAAATAG TAAACAAATG TGCTCTACCC GATGCTTGCA    2520

CCATTGCTAT AAATGACATC CTTGTACCAA TAGAAGGACT TCTTCTTGCT ACCTTTGAGA    2580

GCTCCGTTTC CTACATTATC TCGATCTACA TAGATAAAGC CATAGCGCTT ATTCATTTCC    2640

CCTGTGCCAG CTGAAACCGG ATCGATACAG CCCCAAGTCG TATAACCAAG CAAGTCAACC    2700

CCGTCTTGGT AAATGGCATC TCGCATGGCC TTGATGTGGG CCTCTAAGTA AGTAATCCGA    2760

TAGTCATCTG CTACATAACC ATTCTCATCC GGTGTATCCA TAGCACCGAG TCCATTTTCT    2820

ACGATAATAC TAAACTAAAA TCAAAAAGCA TTATATAATA GTGATATGAA ATCAACTAAA    2880

GAAGAAATCC AAACCATCAA AACACTTTTA AAAGACTCTC GTACAGCTAA ATATCATAAA    2940

CGCCTTCAAA TCGTTCTATA GTAAAATGAA ATAAGAACAG TACAAATCGA TCAGGACAGT    3000

CAAATCGATT TCTAACAATG TTTTAGAAGT AGGGGTGTAC TATTCTAGTT TCAATCTACT    3060

ATATTTCGTC TGATGGGCAA ATCTTATAAA GAGATTATAG AACTTTTATA GTAGTTTGAA    3120

ATAAGATGTG AACAACTCTA TCAGGAAAGT CAAATTAATT TATAGAAATA TTTTAGCAGC    3180

CAAGGTGTAC TGTTATAGAT TCAATACACT ATAGACTGTA ATCAAACAAC GATTTGGCGA    3240

AATGTAAAAA AATATGAGGA GTTCGGACTC GACTCTCTCC TTCAAGAAAC ACGTGGTGGT    3300

CGTAACCATG CATATATGAC AGTTGAGGAA GAGAAAGCCT TTCTTGCCCG CCATTTGAAG    3360
```

433

```
GCTACAGAGG CAGGAGAATT TGTTACAATT GATGCCTTAT TTCAGGCTTA TAAAAAGGAG    3420

TTAGGTCGTT CCTACACACG TGATGCCTTC TATCAACTGT TGAAGCGCCA TGGTTGGCGA    3480

AATATTACGC CACGTCCAGA ACATCCTAAG AAAGCAGACG CTCAAACCAT TGTTGCGTCT    3540

AAAAATAAAA TCTCAATCCA AGAAGGCAAG AAAGCGTTTT AAATATAGTA GACGTTTTCG    3600

TAAGGTTTGC TTGATGTACC AAGCTGAAGC TGGTTTCGGT AGAATCAGTA AACTGGGATC    3660

TTGTTGGGCT CCAATAGGAG TAGGTCCACA TATCCATAGT CACTATATAC GAGAATTTCG    3720

CTATTGTTAT GGAGCTGTTG ATGCCTATAC AGGCGAATCA TTTTTCTTAA TAGCTGGTAG    3780

ATGTAATACT GAGTGGATGA ACGCCTTTTT AGAAGAGCTT TCACAAGCTT ATCCTTTTAC    3840

TCGTTATGGA CAATGCTATA TGGCATAAAT CAAGTACCTT AAAGATTCCG ACTAATATTG    3900

GTTTTGCATT TATTCCTCCA TACACACCAG AGATGAACCC CATTGAACAA GTGTGGAAAG    3960

AGATTCGTAA ACGTGGATTT AAGAATAAAG CCTTTCGAAT TTTGGAAGAT GTCATGAATC    4020

AACTCCAAGA TGTCATACAA GGATTGGAGA AGGAGGTGAT AAAGTCCATC GTTAATCGGA    4080

GATGGACTAG AATGCTTTTT GAAAGCAGAT GAGTATTATA TGCAATTTCT TTATATAAAA    4140

AGACCGGATT GCTCCGATCT TTCAATAGTT CATATTCTCA ATTTCTATTT TAAAAATAGC    4200

TAAGGTTAAC GTCAAATGAC TACGCGACCT ATTTCATACG ATAAAAATCA AGCACTAGAC    4260

CAGCAGGTCC TTGAACTAAT AAGGACTCTG TTCCCCAATC GGTTACAGTT GGTCCGTGTA    4320

AAACCTTTAT ACCAAGCTCG TTCAACCGTT TGTAGTTCTG GTCTACATCC TCAACCTCGA    4380

TATGAATAAT GATTCCTGAC TGAAAGTTTT CCAAAGGAAC CAAATGATTT TGTGACAACA    4440

TAAGGCAGTG ACTACCAATC GTAAACTGAG CAAAACCATC ATTAGCATAA TCTGCCTTTT    4500

TATCCAAGAT ATGCTCCAAG TCAGCACAGA CTTGGGGAAC ATTTGAAACG ATAATATCTA    4560

ATTGATTTAA ATTCATTTAC TCTCCTCCAT AAAAAGACCG GATTGCTCCG ATCTTTTAAA    4620

GTTCTGCTCT ATGAAAATCA AAGAATAAAG TCTACAAGTT TCATATTTGA TTTTCGGCGA    4680

GAGGAATTAT TTAATTGCGC GTGATTGCAA TCCTTCTTCT TCCAAGAAGA GACGGAATGG    4740

TACGAGTTCT TCTGCTTCGT ATTTTTCCTT GAAGGCTTTG ATAGCTTCTT CTGAGTGAAG    4800

TTTTGGATCC AATTCAAGTA CTTCTACTGG AAGTGGACGG TGTTGAGTGA TGCGAGCATC    4860

GATGACAACA GTTTTACCTT CTTTGTTCAA TTTAACAGCT TCTGCAACAA CTGCATCGAT    4920

GTCTTCGATA CGGTCAACTG TGAATCCAAC AGCTCCTTGA GCTTCCGCAA TTTTAGCGTA    4980

GTCAGCGTTT GTGAAGTCTA CACCAAACAA GTGTTTGTTT GTATCTTCGT ATTTGTTCTT    5040

GATGAAGCCG TACTCAGCAT TTGAGAAGAC AAGGTTGATA ACTGGAAGGT CGTATTGAAC    5100
```

434

```
GTTTGTGATA ACGTCTGGGT AGCACATGTT GAATGCTCCG TCACCCATGA TGTTCCATAC      5160

TTGGCGATCT GGATTGTCTT TCTTAGCAGC GATACCACCA GGAAGGGCAA TACCCATTGT      5220

CGCAAAGAGT GGAGATGTAC GCCACATGTT CTTAGGTGTC ATGTGAAGGT GACGAGTAGA      5280

TGTTTGAGTA GTGTTACCTA CGTCGATTGA GTAGATAGCG TCTTGATCAG CATGTTTGTT      5340

GATTGCATTG TAAACTTGAT ACAATTGCAA TTCACCCTCA GTTTTACCTT CGAGTTTGTT      5400

CATGTAATCA CGCCAGTTTT GGTTGTTCTT AACGTTTGCA CGCCACCATG GAGTTGATTC      5460

AACTGGGTTT ACTTTGTCAA GGATAGCTTT AGCTGCTTGA CCAGCATCAC CAAGGATTGA      5520

AGCGTCAAGG GCATGACGTT TACCAAGTTT GTAAGGGTCG ATATCGACTT GGATGAATTT      5580

TTCAGTGTTC TTGAATGCTT CGTAAACTTC AGCAAATGGG AAGTTTGAAC CAAGGAAAAG      5640

AACTGTGTCT GCTTCAAAGA CCACTTCGTT GGCTGGTTTC CAACCAACAC GGTAAGCAGA      5700

ACCTGTCAAA CCTTCATAGT TCCATTCGAA AGCTTCAAAG TTTTTACCAG TTGTGATGAT      5760.

TGGTGCTTTG ATTTTACGTG ACAATTCAGT AATCACTTCA CCAGCTTTAA CACCACCAAA      5820

TCCAGCATAG ATAACTGGGC GTTCAGCATT GTTCAAGATT TCAACAGCTT TGTCGATTTC      5880

AACTTCGTTC AAAGCAGGAG CGATGAATGA GCGTTCGTAT GAACCTGAAC CGTAGTATGA      5940

GTTTTCATCG ATTTCTTGGA AACCGAAGTT TACTGGAATT TCAACAACAG CTGGACCTTT      6000

TTTAGAAACT GCAGCACGGC AGGCTTCGTC AATTACTTTT GGCAATTGCT CAGCGTAAGC      6060

TACACGTTTG TTGTAAACAG CGATACCGTT GTACATTGGG TTTTGGTTAA GCTCTTGGAA      6120

AGCATCCATG TTCAATTCGT TAACTGGACG TGATCCAAGG ATCGCTAGGA ATGGAGTGTT      6180

ATCCATAGCT GCATCGTAAA CACCGTTAAT CAAGTGAGTC GCACCTGGAC CACCTGAACC      6240

AACTGCAACC CCGATTGAGC CGCCGAATTT AGCTTGCATA ACCGCTGCAA GAGCACCTGT      6300

CTCTTCGTGG CGAACTTGTA AGAAACGGAT ATCTTTGTCT TCAGCCAAAG CGTCCATCAA      6360

TGAGCTGAGT GTTCCTGATG GGATACCGTA GATTGTATCT ACGCCCCATG TTTTCAATAC      6420

GTTAAGCATT GCTGCAGATG CAGTAATTTT CCCTTGAGTC ATAATGATAA CTCTCCTTCA      6480

ATTTTTTTAA ACTTGGAGAA TACGATTACA TAGAATTGGA AACGTTCTCC AAATTTTTAC      6540

TATTCCACTG TATCATATTT ATGCTGACTT TTCTAAAAAT CTGCTCAAAA CTCTCTATTC      6600

TCTATTCTAA TACAGTTTTG AAAGTTCTGT CATTTCTGTT TTATAACAAA GAAATCTAGT      6660

CATTACTTTT AGTCTATTTT ACTAAAATTT AACAGAAGGG AACTGGTCAG AACAGATACA      6720

GAACTAAAGG CCATGGCTAG ACCTGCCAAT TCTGGGTTGA GAGCCAGTCC AACACCTGAA      6780

AAGACTCCTG CTGCAATCGG AATTCCGACA ACATTGTAGA TAAAAGCCCA GAAAAGATTG      6840

AGTAGAATTC GATGAAAGGT TTTCTTACTC ATATCAAAGG CACGAACCAC TCCTAAAAGA      6900
```

435

```
TTATTGGTTG TCAACACCAA ATCTGCTGAC TCGATGGCGA TATCTGTTCC AGCTCCCATA    6960

GCAATCCCCA CATCTGCTAC ACTAAGGGCA GGAGCGTCAT TGATACCGTC CCCAACAAAG    7020

GCTACTTTCC CTGACTGTTG CAGTTTATGG ATTTCATGGG CTTTTTCTTC TGGCAAGACG    7080

CCTGCAATGA CCTCTTCAAT TCCGATTTGA TCTGCAATAG CACGCGCCAC ACCAGCATTG    7140

TCTCCTGTCA GCATGACTGT TCGGAGACCA CGTTTTTTTA GCTGACTGAT GGCTAGCTTA    7200

GCATTTTCCT TAGGAATATC TTGCAAAGCA AGCAAGCCTT TGATTTCATT GTCAACAGCT    7260

AAGAACACAA CTGTCTTAGC TTCTTTTTCT AGTTCTTCTA GTTTATCTTG ATAAGTATTA    7320

GAAATATCCA TGCCATCCAG CATTTTAGCA TTTCCAAGTA AAACTTGTTT TCCATTGATT    7380

CGCCCTGAAA CACCTTTCCC GTGCAAGGAC TGAAAATTTT CAACAGTTTG AAACTCAAGT    7440

CCAGCTTCAC TCGCTCGCTT AACGATAGCC TCAGCCAGTG GGTGTTGAGA AGCATCTTCC    7500

AAGGAGGCTG CCAACCCAAA CACTTCTACT TCGTCGCCGA TGACATCTGT TACCACAGGT    7560

TTCCCTTCCG TCAAAGTCCC GGTCTTATCA AAGACAAGGG TTTGAACTTT CTGGATTTCC    7620

TGTAAGACAG TTCCATTTTT GAGGAGAACC CCCATCTTGG CACTACGTCC TGTCCCCACC    7680

ATAAGGGCTG TCGGTGTTGC AAGTCCCAAG GCACAAGGAC AGGCGATAAT CAAAACCGCC    7740

ACTCCGTAGA GAAGAGAGGA CACAAAGCTA GCTCCAAGCA CAACCACACT ATCCCTGAGC    7800

AAGACGAACC AAACCCAAAA GGTCATGATT CCTAAAATGA CAACTACTGG GACAAAAATC    7860

CCTGAAATCT TATCCGTCAA GTCCTGAATC GGCGCACGAC TTGTCTGAGC TTTCTTCACA    7920

AAATCCACAA TCTGAGCCAA AACAGTCTCT GAGCCAACTT TTTCTGCTCT AAAGACAAGC    7980

GTTCCACTAT GATTGATGGT TGAGCCAATG ACAGTATCTC CAACTGTCTT GTCCACAGGC    8040

AGACTCTCAC CTGTCACCAT GGATTCGTCA ATACTAGAGA CACCTTCTAC TACGACACCA    8100

TCAACAGCAA TCTTTTCACC GGGACGCACT CGAATCAGGT CGCCTACCTT GACTTGTTCC    8160

AAAGGAACTT GGACATAACT ATCATCACTC AAGACTTCTG CGGTTTTAGC TTGCAAGTCC    8220

AGTAATTTCT CCACAGCTTG GGACGTATTT TTTCTCATTT TTTCCTCAAA AACTGCTCCC    8280

AAAAGAACGA AAAAGAGGAT AAATCCAGCA CTTTCGAAGT AAACAGGGAG ACCAGCAAAG    8340

AGAGCAACTA GGCTATAGAA ATAAGCCACT AGAGTTCCCA GCGCAACCAA GGTATCCATG    8400

TTGGCATTGT GCTTTTTAAA ACTGGCCCAA GCACTCTGGA TATATGGCTT ACCTGCAACT    8460

AACATAATAG GCGTTGTTGC TAGAAAGGTT CCCCAATGCA TGACTTGATG ACTAATGCTA    8520

CCTGTCAACA TCCCAATCAT GAGAATCACA AGAGGCACAG TAAAGATACT AGTAATCCAA    8580

AAACGTTGCA GGAGAGATAG AGATTTTCGA GTCTTCTCAA CGACTGTATA GCTTCCCTTT    8640
```

436

```
TGCATCTTCA TGCCACAAGA AAAATTCATGT CGCCCTAATT CTTGAGGCGT AAAACGAATG    8700

ACTTTCTCCT CATCTACGCC GATTGGTTCC AAGATACCTT CTTCTTCAAA CAGAATTTCC    8760

TTATAACAGT TTGAAGGAGT AGCACGATGA AAGGTAATCT CAGCTGGAAT TCCCTTTTGA    8820

AGCTGGATAT GGGCTGGATG ATAGCCTTTT TCAGCTCGGA TACGGATTTT TTGAATGCCA    8880

TTTTCTAAGC TTGCTTTCAC AATTTCTGTC ATAGTCTCCA CCTACTCTAC AATCATCTTG    8940

CCGTGCATCA TGTTCATACC ACAAGCAAAG CCAAACTCTC CAGCCTGTTC AGGCGTGATT    9000

TCCACTACAT ACTCTTCCCC CATTGGCAGG TTCGCATGTA CACCAAAATC TGGAAAAACA    9060

ATTTGATCCA GACATGGTGA AGGATCCTTG CGGTCAAAGA CAATGCGTGC TGGCACTGAT    9120

TTCTTGAGGA CAATCAACTC AGGAGTATAG CCTCCCATGA CTTCCACTCG AATCTCTTGG    9180

TATCCGTTTT TTTGCTGGGC TTTTTGTCCA GATTTTTCAG GCTTTTTGAA AAACCAAAAC    9240

AAGATAAACG CGATAAGGGC AATACAAATA ATGGTTACAA TACTATTTAA CATGACGTCT    9300

CCTTTACATA CAATTACATC TTACTTCTGT TACAGCACTT GATTTCTTCT CTGAAATCAC    9360

AGCTTCCAAG TCTTCCAAGT CAGTCTGAGT AAATTCACAT TCTACAATCA AGTCAGCCAA    9420

CAAATTCCTA ATCCTACGGG AACAAACCTT GTCTTTGATA TCTTGGACAA GTAAATCCCG    9480

ACTTTGGTCT AGAGTTAAAA GGGCTGAATA AACAAAGGAC TTGCCTTCTT TTTTCCGAGT    9540

CAAACACTCT TTATCAACCA GACGAGCCAA AAGTGTCTGA ACCGTGGACT TGGACCAGTC    9600

AAACCGCTCT GCCAAAACCC TAATCAAATC TGTACTGGTC TGCTCCCCCT GCATCCAAAT    9660

AATCTTCATG ACCTGCCATT CTGCATCTGA AATCTGCATT ACCATACCTC CAAAATCTAC    9720

ATTTGTCAAT TACACTCATC AGTATACTCT TAAAATCTAC ATTTGTCAAT TATAGAAATA    9780

ATATTTTCTT CGAAAAATAG AATTTTAATC ATTTGAAAAA CGATTTGCAG TCAAATATTA    9840

CTATATAAAC AATAAAAATA TGCTATACTA AAGAAAAAAG AAAACAACCA CTAGGGGTGC    9900

GTAAAGCTGA GATTAACGAC TGTTAGATCC CTCTGACTCA ATCTAGGTAA TGCTAGCTGA    9960

TGGAAGTGGA AATGATAATG GGGACTAGCA GTCTTCTATT GCCTTTCTAA AACAGACTAG   10020

CTTGTTCTTA AGAATACAAA CTTCAGTTGG TTGGGAGGTT TTAGATGACT TATTTACCCG   10080

TTGCTTTGAC CATTGCAGGG ACTGACCCTA GTGGTGGTGC TGGCATTATG GCAGATTTAA   10140

AGTCATTCCA AGCGAGAGAT GTCTATGGAA TGGCTGTTGT AACCAGTCTT GTCGCTCAAA   10200

ATACCAGAGG TGTTCAGCTA ATCGAGCACG TTTCTCCTCA AATGTTGAAA GCCCAATTGG   10260

AGAGTGTCTT TTCTGATATT CCACCTCAGG CTGTAAAAAC TGGAATGTTG GCTACTACTG   10320

AAATCATGGA AATCATCCAA CCCTATCTTA AAAAACTGGA TTGTCCCTAT GTCCTTGATC   10380

CTGTTATGGT TGCTACAAGT GGAGATGCCT TGATTGACTC AAATGCTAGA GACTATCTCA   10440
```

437

```
AAACAAACTT ACTACCTCTA GCAACTATTA TTACGCCAAA TCTTCCTGAA GCAGAAGAGA    10500

TTGTTGGTTT TTCAATCCAT GACCCCGAAG ACATGCAGCG TGCTGGTCGC CTGATTTTAA    10560

AAGAATTTGG TCCTCAGTCT GTGGTTATCA AAGGCGGACA TCTCAAAGGT GGTGCTAAAG    10620

ATTTCCTCTT TACCAAGAAT GAACAATTTG TCTGGGAAAG CCCACGAATT CAAACCTGTC    10680

ACACCCATGG TACTGGATGT ACCTTTGCTG CAGTGATTAC TGCTGAACTA GCCAAGGGCA    10740

AGAGTCTTTA CCAGGCAGTT GATAAGGCCA AGGCCTTTAT CACAAAAGCT ATTCAAGATG    10800

CCCCTCAACT CGGTCATGGT TCTGGTCCAG TCAACCATAC AACTTTTAAA GATTAAGAAA    10860

AAAAACTCTC TAGTTCCCAC TTTAAGGGAA TTAGAGAGTT TTTATACTCT TCGAAAATCT    10920

CTTCAAACTA CGTCAGCTTC CATCTGCAGC CTCAAAACAC TGTTTTGAGC TGACTTCGTC    10980

AGTCTTATCT AAAACCTCAA GGCAGTACTT TGAGCAACCT GCGACTAGCT TTCTAGTTTA    11040

CTCTTTGATT TTCATTGAGT ATTAATTAGG AAAGAATGTT ATGCAACTTT TTTAAAAAGG    11100

CTTGCGTTTT TGCCTCAATA TCTTCTGCTT GCATCAAATC ACGTACAACA GCTACACCAG    11160

CTATGCCAGT GCCCATAAGC TGATCAATAT TCTCCGAAGT CAAGCCTCCA ATAGCAACTA    11220

CTGGAATGGC AACCGTTTGG CAAATTGTTT TCAAGGTCGA TATCAGAGTA ATGGGCGCAT    11280

TTTCCTTGGT GGTGGTTGGG AAAATGGCTC CTGTACCCAA GTAATCTGCA CCTGATTTCT    11340

CCGCTTCCAG AGCTCTTTTA ACCGTTTTAG CGGTGACACC GAGGATTTTT TCAGGACCCA    11400

AGACTTTGCG AGCTACCGAA ACTGGTAATT CATCATCTCC GATATGCAGA CCTGCTGCAT    11460

CAACCGCAAG ACAAACATCC AACCGATCAT CGATTATCAA GGGTACCTGA TAAGCATCTG    11520

TTATTTCCTT GACTTGTTTT GCCAGTTGAT AATATTGATT GGTTGTGAGA TTTTTTTTCTC   11580

GCAATTGGAC TATGGTAACC CCTGAACGGC AGGCCGTCTC AACTTTTGCA AGAAAGCTTT    11640

CCACGGAATC TTGATAGCGA TTGGTTACCA GATATAGTCT AAGTGCTTCT CTATTCATAA    11700

ACCTCTCCTT TGATGGTATC TAGCCAATTT TCATCTCTTC TTAGGAGCGA AAGCTGATTG    11760

AGTACTTGGT AACGAAATTC TTCCAATCCC ATTCCTTGAA CAACTATTTT CTCAGCAGCG    11820

ATATTGAGAT AAGAGACTGC TAAGCAAGAA GCTTCAAAAC CAGTCTTTCC TTGGCTGAGA    11880

AAAACAGCTG TTAAGGCTCC AACCAAGTCT CCTGTCCCTG TTATCCAGTC TAATTCAGTA    11940

CAGCCATTTC CCAGTACAGC GACCTGATTT TTCGAAACGA CGAGGTCCTT GGGACCTGTG    12000

ACTAAGAAAG ACATACCAGG ATAGGTCTGA CACCAGTCTT TCAAGACTTG AAGCAAATCC    12060

TCCGTTTCTT GATCTTTAGC ACTCGCATCG ACCCCAACGC CGTGGTGCTT TAATCCAACA    12120

AGACTTCGAA TTTCTGACAT GTTTCCTTTA AGGACCGTAG GTCTATAGTC TAAAAGGTCT    12180
```

438

```
TTAACTAAGC TCTTACGAAT GGATGAAGTC GTTACGCCAA CCGCATCTAC TACCATCGGG    12240

AGAGAAGATT GGTTTGCATA CGAAGCTGCC ATGCGGATTG CTTTTTCCTT CTCAGCTGAC    12300

AAATGCCCCA AATTGATGAA GAGAGCCTGA CTTTGCTTAG TAAAATCAAG AACTTCACGG    12360

GAATCATCTG CCATGACAGG TTTGCATCCC AGAGCCAAAA TCCCATTTGC CAGCATCTCA    12420

CAAGAAATCT CATTGGTAAT GCAGTGAATG AGGGAACTAG AGCCTATAGG AAAGGGATTT    12480

GTAAATTCCT GCATCAGTCT ATCCTTTCAC TAAAGAAATA TCCCTGCACT TTTTTAAAGA    12540

ATTCCTGCTT GATTAAAAAT CGAAAGGCAA TAAAGGAAAT CGCTGTACCA ATCAAGGTTG    12600

CTCCGAAAAA TCGAGGCGTG TAGATAAACC AGCTAAGCTT AGCAGCTGAT CCTGTAAAGA    12660

GTACCATAAC AGGATAGGAA ACAATGGAAC CAATAATACC TGTTCCCAAA ATCTCTCCTA    12720

GAGCAGAATA GTGAAATTTT CGACCGTACT TATAAAAGAG ACCTGCTAGA AGGGCTCCAA    12780

AAGTCGCTCC TGTGAGAGCT AAAGGCGGAA TCCCTTGAGT CGTCATACGG ATAAAGGCTG    12840

TGACTGTAGC CATAGCCAAG GCATAAACAG GTCCCATCAT GATTCCTGCT AGAATATTGA    12900

CTACACTGGA CATCGGTGCC ATTCCCTCAA TTCGAAAGAT AGGTGTAAGG ACTACATCAA    12960

GGGCAATCAT CATAGATAAA ATGGTTAATT TGTGAACTTG TAATTGGTGC TTTCTCATGC    13020

TTCTATTCTT CTCCTTTTTC TAAAGACTGT AAATCGCTCT TCCATGTCTG GTGTTGGTAG    13080

GCCATTTCCC AAAACTTGGC TTCCATATGA ACACTGATGT GGAAGGCATC TAGCATTTTT    13140

TGCTTGTCTG TCTCGTCACT TTCTCGATAG AGCTGATTGA CCAGTGCTCC CTCCTCTCTG    13200

ATCTGTTGCT CTAACTCATC CGTAATATAA GTTTCAATCC ATTGTTGATA GAGAGGATTT    13260

GGTGATGGTT TAAGATTAAG TGATTTGCCT ATATCATGGT ATAACCAAGG ACAAGGAAGC    13320

AAGCTTGCAA AAGCGATGGC TAAGTTCGGT TCTGCAAATT GCCTATAAAT ATGAGAAATG    13380

TAATGATAAC AGGTTGGAGC GATTGGATGT TGCTCCATTT CCTGGTCGCT GATTTCCAAT    13440

TCCTTGAAAA ATTGTTGGCG AATAAATAAC TCACCCTCCA CTAAACCCTG AGCATTTTGT    13500

TTCAAGAGTC TTTTCATCTC TTGGTTTGAA GTCTTATCAG CCAAAAGATG ATAGATTTCT    13560

GAGAAAGCCT TCAGATAGTA GGCATCCTGA ATCAGGTAAT AGCGGAAAAT GGCAGGTTCT    13620

AAATTCCCCT CTTGTAATTG TAAAATAAAG GGATGATGAA AGGAAGCCTG CCAAGCTTTC    13680

TTGGATAATT CCATCGCAAT ATCTGTAAAT TCCATAATAA CTCCTTTATA AAAATAGACT    13740

GGTTTGAAGC AATAAAAAGA AAAGCAGGTA GATTAATTTT GTTTTTTTAG GAATATAAAA    13800

AGTCCGATAG CTATTCTTCA ACTGTGCATG TTCGTCATAT CCGTGAGCAG ATAGAGCTCT    13860

CAGGTAAAGA TGGCGCCACC TAAAGACTGT CATCAGAACC TTACTGTAAA TCAAGGGCGA    13920

CCAAAAATGT AGTTCTTGAC CACGTAATAG GCAAGCTTCT TTGAGGGACT TGATTTCTTG    13980
```

439

```
CTGAATGAGA GGAAAAGAAT TGAATACCAC AATCAAGGCA TAGGACCAAG AGCGTGATAG   14040

CCCCTTTTGA GCCAAGTACA AGAGAAGCTC TTTTAGTGAA ACAGAGGAAA CAAAGACAAG   14100

GCCGATACAA ACTGTCACAA AGGCCCTCGT TCCAAGCATG ACTGCCTGTG AAGCATCTCC   14160

GTGTAACTGA ACTGCCCAGT AGTTGGCAAA AGATGGTAAA ATGGCAAGTA TGATCATCCA   14220

AGCTAACATT TTAAATCGAC GGTAATAGAG CATAAAGAGA ATACAAAATG CGACTACCGA   14280

AAGAGTCAGA GCAATCGAAG GAATGAAAGA TGTTTCCAAG GATAAAATCA GCAAGAAGAG   14340

ACTGATAATC GGTGTCTGGG TTGCTACTTT GACCATACTA TCTCACCTCC CCTTGGGTAT   14400

TGCTACTCTG AGATGTAAGT GGTTTGGTAA TGGTCACTTC TTTCACATGC CGAAGACCCT   14460

GACTAGTCAT CTCAATCCAA TAATCAACCA CAGAAATCAA AGGGTCTAAA CGATGACTAA   14520

TGAGCAGAAA ACTTCTTCCT TGATTCCTCT CCTCCACAAT CCACTTGCAA AAATAATGGC   14580

AGGCTCTATC ATCCAAACCT GCAAAAGGTT CATCTAGCAA GATCACGGAA GCCTTACTGG   14640

TCAAGATGGT CAGGAGCTGA AGAATTTTTT GCTGACCACC ACTTAATTGA TAGGGACTCT   14700

TATCGACTGC CTGCTCCAAA TCAAAATATC GTAAAGCTTG AAAAATCCGC TGATTTCTTT   14760

CAGAATCAGG TCCATCTAAT TGAAGCTCCT CTCGCAGACT GACTCGGATA AACTGCTTCT   14820

CAGCTTCCTG AACAACACCA GTCAGATCAC GATACAAACT CTTTTTCTTT TTCAGGACCG   14880

AACCCTTCCA AGTAATGCTC CCCTTATACT TTTGAAATTG AAGAATAGAC CGAAAGAGGG   14940

TTGATTTCCC GACACCATTG TCACCCAGGA TACAGGAAAT CCCTTGATAG AATGTGAAAT   15000

CAGCAATTGA AAAGAGGGGG CGATTACCAA GCTCACCAGT CACACGGTTC ATATGGAATA   15060

GTTCCGGGCT AGAAGCAACT TCCTTTGAAG CAACCTGTGT CATCTCATAG GAAGGGATTT   15120

GAAACACTTC CCTTAGTTTT CCGTCTCTTA GCTCCACCAT ATGGTCGATA TAGGCTTTAT   15180

AGTCAGATAA ATCATGGTCG CACAAAATAA CTGTCTTCCC ATCATAGACC AACTCTTTTA   15240

GAATCTCCAA TATCTCGATT CTGCTCTTGC GGTCAATGGA AGCGAAGGGC TCATCCAAGA   15300

GATAGACCCT AGGATTCATG GCAAAGAGGA CAGCCAGCGC TGCTTTTTGC TTTTCCCCAC   15360

CTGATAAGTG ATGGATGAGA CGGTGCAAGA TGTCCTTGCA ACGACATTGC TGGACAACCT   15420

CTGCTATTTT AGAATCAATT TCCTGAAGGT GATAGCCGAT ATTTTCCATG GTAAAAACCA   15480

ACTCCTCAAA CAAGCTCTCC ATGGTAAATT GATGATTAGG ATTTTGCAAG AGAATACCAA   15540

CCGTCTGGAC ACGTTCGACG ATAGAAAGCT GACTGACCTC GCTCCCATCT ATCAGGACTT   15600

GACCGCTATA GGGAAGAGAA CTAACTTGGG CAATCATTTG AAAGAGGCTG GATTTTCCAG   15660

ACCCACTACT CCCAACTAAC AAGGTAAAGG CTTGCGCATG AAAAGTAAAA TCAAACGGCT   15720
```

```
                                        440
     CAGAGAAGAT TGGGGACTGA ATCGCTCGTA GTTCCAGACC CATCTATGCT TTTCCTCCAG    15780

     TTGCAAACTG ATGATAGAGT TTGACAATGG CACGAACCAA GATGGTACAG AAGAAATAAA    15840

     CAGAAATAAA ACGTACCACA AGCAAGGAAA GGACAAACGG AAGGGAAAAG GCGTAGTAAC    15900

     CTAACTTAAT GTATTCATAG ACAAAGCTAA CAAGCGTAAT CCCAATACTA TTAGCAGTTA    15960

     GAGAGAGCCA ACTTTCATAG CGATTCTTAG TTACGATAAA ACCAAATTCA CTTCCCAAAC    16020

     CTTGAACAAA GCCAGACAAA AGAGCTCCTA GACCAAATTG GCTACCATAA AGGACTTCAG    16080

     CAAGCGCAGC TAGCACTTCT CCAATCGTTG CACTTCCGAC TCTCGGAACA AAGATGGCAG    16140

     CAATGGGCGC AGCCATACAC CAGAGACCGA AGAGGATTTC ATTGGCAAAG GCCTGCAAAC    16200

     CAAGAGGTGT TAAGAGTAGA CTGAGAATAT TATACACATA TCCTGAACCA ACGAAAACCC    16260

     CACCAAAAAA GATAGACAAG AAAGCAAGCA AGATAACATC TTTTAACTGC CATTTTTTCA    16320

     ACATAAAAAA CTCCTTTTTT TAAAGAAAAG TGAGGCACTC AAGAAGACCG ACCTAAATAC    16380

     TTTGTATAGC AGACTGAATT TAGAACAGTA CACAAGAACA CTAAAATATT TCTAGAAATT    16440

     AATTTGAATT TTCTAATTGA TTTGTTCGCA TCTTATTTCA ATCTACTATA TCATCTTCAT    16500

     CCAGTTTCGT AAAAGAAAAA ACTCTAATTA CAGATACAAA TTAGAGTTCA GCTTACAAGA    16560

     TTAGACAGTT CTTTTCGACA TACGAAAAAA ACATTTCACA TTTCCCTTCG CCAGTCTTAA    16620

     CTGTATCAGG TTCAATGGGT ATCATCTCAG CCTAAAGCAC CCCAAATGTC TTTATTATTT    16680

     AATTATGTGA TTATTATAAC ACACATTTTA TACTAGTTCA AGAAATTGAA CTGGAAATAC    16740

     AGCCTTGCAC TCACAAAGAC AGCAGATCTT TCTTTTGCAA AAAACAAATG ACCTGTTTGA    16800

     TGAATTAGCC ATTCAAGCTG AATCTGGACA TAGCTTTTTA AAAAAGGAAA ATCCTACTTA    16860

     CTTAGAATCC AAGGATAGAT ATCTATTGTT CACTCATTTC CCGAACAGTT TTTTCTATAT    16920

     TTTTTGCATA CGATATTGCC GAAATGATTG AAACGCCATC CATATTGGTC TTTATAATGT    16980

     CTTTAATATG TTTCGTCTGT ATCCCACCAA TTGCAACTAA AGGCATTTGT GGCAATAGTT    17040

     TTCTCATCAA TTCAAGACCT TCATAACCTA TAGTACCACC AGCATCATCC TTTGACTGGG    17100

     TACCAAATAC AGGCCCAACA CCTACATAAT CTACATATTC AACTTTTGAT TGTTGAAATT    17160

     CTTCTTCGTT TCTTATAGAA AGACCAATTA TTTTATCTGG CATCAATTTT CTAATTTCAT    17220

     CAACACCAAT ATCATCTTGA CCTACATGTA CGCCATCGGC GTCAATTTCC ATTGCTAAAT    17280

     CTATATCGTC ATTAACGATA AATGGAACAT TGTATTTTTT ACAAAGTTCT TTAATTTGGA    17340

     TAGCTAGCTC AAGTTTTTCT AAGCCTTCTA AAGCACCCTC ACCTTTTTCT CGAAATTGAA    17400

     ATAAGGTTAT ACCACCTTTT AAGGCTTCCT CAACGACTGT ATATAGATTT TTTCCTTGGC    17460

     AAGTAGTCGT TCCACAAATA AAATATAGTT TTAGTAATTC TTTATGAAAC ATCTTACTTC    17520
```

441

```
ACTCTTTTGA ATTCCTTTAC ATCTTCATCT GTAATCTCGT ATAAGGCATT TATAAATTCA    17580

ACTTTAAATG TCCCAGGAAG ATGTCCATTT GGACGTTTTT CTGCTATTTC TCCAGCGATA    17640

TTGTAAACCA ACACTGCTGT TTTTAATGAT TTCAATTCTT GACCTTTTTC TAGTCCGATA    17700

AAGCTTGCTA CTACAGCTCC TAATAAGCAT CCTGTCCCAA TGACTTTCGG CATCATAGCA    17760

CTACCATTAT GAATCATTAC CACTTCTCCA TTAACAGCAA TGGCATCCAC TTCACCTGTT    17820

ACTACTATTG GAATATTGAA CTTCTCATTT GCTGCTAGAG CAATTTCGTC AATATTATCT    17880

ACGCCCGCAC TATCTACTCC TTTAGATGCC ACATCTATTC CTACTAAAGA GGCAATCTCG    17940

CCAGCATTTC CTCTAATCGC TGCTAGTTTA TAATTGTTGA TTAGATCATC TGCTACTTTT    18000

TTTCTATATT CTCCTGCTCC ACAGGCTACA GGATCTAAAA CTGCTGGGAC ATTATATTTC    18060

TCTGCAATTT TCAGAGCAGC TTGGTATAAT TTCCAATTTT CATCTGTCAA TGTTCCTATG    18120

TTTATTAATA AACCACCAGC ATACTTTAAC AAATCCTCTA AATCTGCTGG AAACTCACTC    18180

ATGGCTGGTG AGGCGCCCAG TGCTACTAAT CCATTTGCTG TGAAATTTTT TACTACATCA    18240

TTGGTTATAC AAATGACCAA TGGTGCTTTT TCTTTTAATA ATTTTAAACT TGTCATATTG    18300

AAATCCTTCC TTTTCACTTT ATACGATCTA CTAATTTCGA TTTATCTTTA GTTGAGAATT    18360

TTTTTCATTT ACATTGAATG ATTTATACTC AATGAAAATC AAAGAGCAAA CTAGGAGGCT    18420

AACCGCAGGT TGCTCAAAAC ACTGTTTTGA GGTTGTGGAT AGAACTGACG TGGTTTGAAG    18480

AGATTTTCGA AGAGTCTTAC CTCATCAAAT TTGTAAATAT CATGAGCCTT CTCTAGACAT    18540

CGTAACCAAT ATCAAAAAAA GCTAATTCTA AAGCGACTGC TTGATTCCAG CGTTGCTGAA    18600

GTTCTGTCAA ATCTTCTCGA TTTTTACCGA CACGATTGAG TTCGTCAACC AGAAATTGAA    18660

CCCACTCTGC AAAGAAAGGA CCTCTGTGGA GATTGATCCA TTCCGAATGA ATATAGACTT    18720

CAGGTAAAGC CAAATCTTTA GAACCCCAGT CTAAATAGAG ACCTTCTGCA ATGACCAGCA    18780

TGACCAAAAG ATGGGCATAG TCTGATGAAG CCACCGCCGA ATACATTAGA TCCTGAAAGG    18840

CTTTTGTTAC AGGGTGCAAA GTCACTTCTA GATAGTCATT CTCTGCTACT TTTAACTCTT    18900

TAAAAGCCTT TTGGAAATAA CCATCTTCAT CTGCTTCAAG AAAGCCTAGT TGCTTGGCAA    18960

AACGAAGCTT GGATTCAAGT TTATCTGCGT GACTACGCAG GCACCCAGCA TGGATAAGAA    19020

GGCATCAAAG AAGTGATAAT CTTGAATCAG ATAGTCCTTT AAGACCTTAT TCTCAATTGT    19080

CCCCGCAAAA AGTTCCTTAA CAAAACGATG ATTGATTGCA GCCTGCCAAT CCTTCTGACT    19140

GCTTTTTAAT AATTCTCCAA CAGTCAAACC TGGCTGAAAT GCATAGTCTT GTGTTTCCAT    19200

ATTTACTTCT CCTCTCTTTA CTTGTTAGTA ATTAATAAAA CACCAAGAAA TATCAAGCAA    19260
```

442

```
AATCGTAATT CCACTTGATC CTTTTAAAGC ACATCGAGAG CATTTGCAGA GAGCTAACTA     19320

AACAAGCCTA TCCAGTTTAT ATAAACAAAA AACTCCAATT ACAATCAAGA ATTAGAGTTG     19380

ACTTACAAGA TTAGACCGTT CATTTCACCA TACGAAAAAA CTGTTCACAT TTCCCTTCGC     19440

CAGTCTTAAC TGTATCAGGT TCAATGGGTA TTATCTCAGC CTAAAGCACC CCAAATGTCT     19500

CTATTATTTA ACTACTGAAC CAGTATAGCA AAAAATGAAA GCCCTAGCAA GATATTTGAC     19560

CGAAAAATAT CTTTATATAT AATATATTGA AACTAGAATA GTACACCTCT ACTTATAAAA     19620

CATTGTTAGA AATCGATTTG ACTGTCCTGA TTGATTTGTC CTATTCTTAT TTCATTTTAC     19680

TATAGTTTTC GATAGCAATT TATTCTTCCA ATACACGAAG AAAAACCTCC ACATTCAGTG     19740

GAGGCAATCT GTTTTATCAA TACAATTTTA AGTCACGAGG GTCAACTGGG AAGGTTGGGT     19800

TGTATGGATT GTGACGGAGC TTGAAGTGTT TGACATCTTC AATGGTCTGA GTTCCAGACA     19860

ATTGCATAAC TGTCTTCAAT TCCGCATTCA AGTGTTCAAA GACTTGACGC ACACCGACAC     19920

TACCACCGAG AGCCAAGCCA TAGATGACAG GGCGTCCAAT AGCAACCAAG TCTGCTCCTG     19980

ATGCCAAGGC TTTAAAGACG TGTTGACCAC GACGAACACC AGAGTCAAAG ACAATCGGCA     20040

CACGTCTATC AACTGCTTCT GCCACTTCTT GAAGCGAGTC AAAGGCAGCT GGTCCACCGT     20100

CGATTTGACG ACCACCGTGG TTGGTTACCC AGATACCAGA AGCTCCTGCA GCAAGCGAAC     20160

GTTCAACGTC CTCACGGCAT TGTGGTCCCT TGACATACAC AGGAAGACCA GAGTATTCAG     20220

CGATAAATTC TACATCGCGT GGAGACAAGC GTTGTTTAGC TGATTTGTAA ACAAACTCCA     20280

TTGATTTACC AGCACCTTCT GGCAGGTATT CTTCAACAAT CGGCATGCCA ACTGGGAAGA     20340

CAAAACCATT ACGCTTATCC ACTTCACGAT TCCCCCCTAC AGTAGCATCT GCCGTCAAGA     20400

CAATCGCTTT ATAACCTTCA GCCTTCACAC GGTCCATGAT GTGGCGGTTG ATACCGTCAT     20460

CCTTACTAAA GTAAAATTGA AACCAATGAG GTGTCCCTTG GAGGGCTTCA GAAATCTCTG     20520

GAAGGTCAAC AGTAGAGTAA GAACTGGTTG TATAAAGAGA ACCAAACTCA TGCACACCAC     20580

GCGCAGTCGC CACTTCCCCC TGTTCATTTG CCAATTTATG AGCCGCAACA GGTGCCATAA     20640

TGATTGGAGA AGATAGTTTT TCACCTGCAA ATTCAATCTC TGTACTTGGA TTTTCTACAT     20700

TGCAAAGTGT ATGAGGAACG ATGAGCTTGT GGTTAAAGGC ACGGATATTC TCTCTTAAAG     20760

TGAAAGTATC TTCCGCCCCA CTAGCGATAT AGCCAAATGC TGCTTTAGGA ATAACTTGTT     20820

GCGCCATTGG CTCCAAATCA TAGGTATTGA TGAArTCTAC ATGACCTTCT GCATTGCTTG     20880

TTTTGTATGA CATAAAATGT CCTCCTTAAT AAGTAAGCGT TTACTTTGTG TATTACAAAA     20940

ATATCTTAAC TCTTTTTCAA AACTTTTAAA ATATTTTGTT TGGAAATTTC AGAAATTTTA     21000

TGTCTATGAT AAAAATCCTT ATAACGGCAA TAAAAAATAG ATATTATCCA AAGAAGATTT     21060
```

443

```
TAAGTGCTAC AATAACTGTA TTATTTCTAG ATGGGAGGTT CTATTTTTGG ATTGATCCAT    21120

TGTTGAACAA TATCTACCAC TATATCAAAA GGCATTCTTT CTGACCTTGC ATATTGCAGT    21180

TTGGGGAATT TTGGGATCCT TTCTGCTCGG TTTAATCGTT AGTATCATCC GACATTATCG    21240

AATCCTTGTT TTGGCGCAAG TAGCGACAGC CTACATTGAA TTGTCACGTA ATACGCCCCT    21300

TTTGATTCAA CTCTTCTTTC TCTACTTCGG TCTTCCCCGA ATCGGGATTG TCCTATCTTC    21360

AGAAGTCTGT GCAACGCTTG GGCTTGTCTT TTTAGGAGGC TCCTATATGG CAGAATCTTT    21420

CCGAAGTGGG CTGGAAGCCA TCAGTCAAAC CCAGCAGGAG ATTGGCCTCG CTATTGGTCT    21480

GACACCTCTA CAGGTCTTTT ACTATGTGGT TCTTCCGCAA GCAACAGCGG TGGCACTCCC    21540

CTCCTTTAGT GCCAATGTCA TTTTCCTTAT CAAGGAAACC TCTGTTTTCT CAGCAGTGGC    21600

TTTGGCCGAC CTCATGTACG TCGCCAAGGA TTTGATTGGT CTCTACTATG AGACAGACAT    21660

TGCGCTAGCT ATGTTGGTAG TTGCTTATCT AATCATGCTG CTACCCATCT CACTGGTCTT    21720

TAGCTGGATA GAAAGGAGGC TCCGCCATGC AGGATTCGGG AATCCAAGTA CTCTTTCAAG    21780

GAAATAATCT CCTGAGAATC TTACAGGGAT TGGGCGTTAC GATTGGGATA TCCATCCTGT    21840

CTGTCCTCTT ATCCATGATG TTCAGAACAG TCATGGGAAT CATCATGACC TCCCATTCTA    21900

GAATCATACG ATTTTTAACA CGATTGTATC TGGAATTTAT CCGTATCATG CCCCAGCTGG    21960

TGCTACTCTT CATCGTTTAC TTTGGCTTGG CTCGAAACTT TAATATCAAT ATCTCAGGTG    22020

AGACTTCAGC TATTATCGTT TTTACCCTCT GGGGAACAGC TGAAATGGGA GACTTGGTAC    22080

GTGGAGCTAT CACTTCTCTC CCTAAACATC AGTTTGAAAG TGGACAGGCA CTCGGCTTGA    22140

CTAATGTTCA ACTTTACTAC CACATCATCA TCCCACAAGT CTTAAGAAGA CTGCTACCGC    22200

AGGCTATCAA TCTTGTCACT CGGATGATTA AAACCACTTC ATTAGTTGTT TTGATTGGGG    22260

TTGTGGAAGT GACCAAAGTT GGACAACAAA TCATCGATAG CAATCGCCTG ACCATCCCAA    22320

CTGCTTCATT TTGGATTTAT GGAACCATTC TAATCTTATA TTTCGCAGTT TGCTACCCTA    22380

TTTCCAAACT ATCCACTCAC TTAGAAAAAC ATTGGAGAAA CTAAATGTCT GAAACTATCT    22440

TAGAAATCAA GGAACTAAAA AAATCCTTCG GAGACAATCC CATCCTCCAA GGACTTTCTC    22500

TAGAAATCAA AAAAGGGGAA GTTGTTGTCA TCCTAGGGCC ATCTGGTTGT GGGAAAAGTA    22560

CCCTCCTTCG TTGCCTCAAC GGCTTAGAAA GTATTCAAGG TGGAGATATT CTTCTGGATG    22620

GTCAGTCTAT CGTTGAAAAT AAAAAAGATT TTCACCTAGT TCGCCAAAAG ATTGGCATGG    22680

TCTTTCAAAG TTATGAACTC TTTCCCCATC TGGATGTCTT ACAAAACCTC ATCCTAGGCC    22740

CTATCAAAGC TCAAGGAAGG GACAAGAAAG AAGTAACGGA AGAAGCTTTG CAATTACTAG    22800
```

444

```
AGCGTGTCGG TTTGCTGGAT AAACAACATA GCTTTGCCCG TCAATTATCT GGTGGACAGA    22860

AGCAACGTGT TGCAATTGTC CGTGCCCTCC TAATGCATCC AGAAATCATC CTTTTTGACG    22920

AGGTGACTGC TTCGCTGGAT CCAGAAATGG TGCGTGAGGT GCTGGAACTT ATCAATGATT    22980

TGGCCCAAGA AGGCCGTACC ATGATTTTAG TAACCCACGA AATGCAGTTT GCCCAAGCCA    23040

TTACTGACCG GATTATCTTC CTCGACCAAG GGAAAATCGC TGAAGAAGGA ACAGCTCAAG    23100

CCTTCTTTAC CAATCCGCAA ACCAAACGAG CCCAGGAATT TTTAAACGTC TTTGACTTTA    23160

GCCAATTCGG CTCATATCTA TAAAGGAGAT TCTTATGAAA CTATTCAAAC CACTCTTAAC    23220

TGTTTTAGCA CTTGCCTTTG CCCTTATCTT TATCACTGCT TGTAGCTCAG GTGGAAACGC    23280

TGGTTCATCC TCTGGAAAAA CAACTGCCAA AGCTCGCACT ATCGATGAAA TCAAAAAAAG    23340

CGGTGAACTG CGAATCGCCG TGTTTGGAGA TAAAAAACCG TTTGGCTACG TTGACAATGA    23400

TGGTTCTTAC CAAGGCTACG CTACGATATT GAACTAGGGA ACCAACTAGC TCAAGACCTT    23460

GGTGTCAAGG TTAAATACAT TTCAGTCGAT GCTGCCAACC GTGCGGAATA CTTGATTTCA    23520

AACAAGGTAG ATATTACTCT TGCTAACTTT ACAGTAACTG ACGAACGTAA GAAACAAGTT    23580

GATTTTGCCC TTCCATATAT GAAAGTTTCT CTGGGTGTCG TATCACCTAA GACTGGTCTC    23640

ATTACAGACG TCAAACAACT TGAAGGTAAA ACCTTAATTG TCACAAAAGG AACGACTGCT    23700

GAGACTTATT TTGAAAAGAA TCATCCAGAA ATCAAACTCC AAAAATACGA CCAATACAGT    23760

GACTCTTACC AAGCTCTTCT TGACGGACGT GGAGATGCCT TTTCAACTGA CAATACGGAA    23820

GTTCTAGCTT GGGCGCTTGA AAATAAAGGA TTTGAAGTAG GAATTACTTC CCTCGGTGAT    23880

CCCGATACCA TTGCGGCAGC AGTTCAAAAA GGCAACCAAG AATTGCTAGA CTTCATCAAT    23940

AAAGATATTG AAAAATTAGG CAAGGAAAAC TTCTTCCACA AGGCCTATGA AAAGACACTT    24000

CACCCAACCT ACGGTGACGC TGCTAAAGCA GATGACCTGG TTGTTGAAGG TGGAAAAGTT    24060

GATTAGTCAT TAACTCTTAA AAGGAACTGG ATTTTAAGCT CCAATCCCTT TTTAAGATTT    24120

TACCTATAAC ATCCTGAGTC TATCTAAGAT GTTCAATCTG AACACAGTGT ACATACTTTA    24180

TCTTCTATTG CATATACTTT ATCACATAAG ATACGAATAT CCTCTTCACT ATGACTAGCA    24240

ATCAAAATTG TTGTCCCTTT TTCACTAGAG AGCTTTCTAA ACAATGTTCT CATATTTTCT    24300

ACACTTGATT TATCCAAGGC ATTCATAGGT TCATCTAGTA AAAGAATAGA GGGATTCTCC    24360

ATAATTGCTT GAGCAATCCC TAGCTTTTTC CTCATACCTA GCGAATAAGT TTTAACTTTC    24420

TGGTCTTTTT GCTCATATAG ACCAACTATT TTCAGTGTAT CATTGATTTC CTGATTACCA    24480

ACTACTCCTC GTATGCTTGC CAAATATTGT AAATTCTTAA AGCCACTATA ATAATTTATA    24540

AAACCAGGTT CTTCAATCAA AGCTCCCAAA TTAGCTGGAA TTTTTCTCTC AGGAACAATA    24600
```

445

```
TTTTCCCCAT TGATTAACAC TTCTCCATAA GACGGACTAT ATAAACCAGC TATTAATTTA    24660

AACAATACAC TTTTCCCTGA GCCATTCGCA CCAGTAATTC CTATAATTTC CCCCTGTTTA    24720

CAACTAAAGT TAAGGTTTTG AAAAACACAT GTCTTTTTTA ATTTCAACTC AATATTTTTT    24780

AATGTAATTA TTTCATTCAT TCTATAAACC TCCTCTTTTG ACGAGTGAAA TAGAAAATGC    24840

TTTGAAAAAG AAAGACTAAA AATAGCAACT GAAGAAATAA ATCTCGTCCT ATATCTCCAT    24900

TCCCTCGATT CAAAATATAA AATAGATAAT TAGTTCGATT TCCTACAAAT AGACCACCAA    24960

ACACAATCAT GAGTAAAAAG AAACTAACGC AAGCAAAGTT CG                       25002
```

(2) INFORMATION FOR SEQ ID NO: 49:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 11443 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

```
CAGGTACGGT GAGGCGCAAC TAAAATATAA TTTTCATCTT GATTAGGAAT TTTATCAGTA       60

TTATGATAGT GAGCATTGCC ATTGATGGAC CATAAGAGCA ATACAACTAA TCCACGCAAA      120

TAAGTATAAA ACATGCGATC TCCTTCGATT GTTTTCTTGT TATTATTATA CCTTATCAAA      180

GGAGGGCTGG CAAACTTTTC CCTTGACTAG ATACATATTT AGGATGAAAT TAGAATTCTG      240

TTAAAAAAAA TGATATAATA GAATTTATGG ATAAAAATAA GATTATGGGA TTAACCCAAA      300

GAGAAGTCAA GGAAAGACAG GCTGAGGGTT TGGTCAATGA CTTTACCGCA TCAGCCAGTA      360

CCAGCACTTG GCAAATCGTT AAACGAAATG TCTTTACCCT TTTTAACGCT TTGAACTTTG      420

CCATTGCTTT GGCTCTTGCC TTTGTGCAGG CTTGGAGCAA TCTGGTCTTC TTTGCTGTTA      480

TCTGCTTTAA CGCTTTTTCT GGGATTGTGA CCGAGCTACG AGCCAAACAC ATGGTGGACA      540

AGCTCAATCT CATGACCAAG GAAAAGGTCA AAACCATCCG TGATGGTCAG GAAGTTGCTC      600

TTAATCCTGA AGAATTAGTG CTAGGAGATG TCATTCGTTT GTCTGCAGGA GAGCAGATTC      660

CTAGTGATGC CTTGGTTTTG GAAGGCTTTG CGGAAGTCAA TGAAGCCATG TTAACGGGAG      720

AAAGTGATTT GGTGCAAAAG GAAGTTGACG GCTTACTTTT GTCAGGAAGT TTCCTAGCCA      780

GTGGGTCAGT TTTATCTCAA GTTCACCATG TCGGTGCAGA CAACTATGCT GCCAAACTCA      840

TGCTTGAGGC TAAGACCGTT AAACCCATCA ACTCCCGTAT CATGAAATCG CTGGACAAGT      900

TGGCTGGTTT TACTGGGAAG ATTATCATTC CCTTTGGTCT GGCTCTCTTG CTGGAAGCCT      960
```

446

```
TGCTTTTAAA AGGCCTGCCT CTCAAGTCAT CCGTTGTAAA CTCGTCGACA GCTCTTTTGG    1020

GAATGTTGCC TAAGGGAATT GCCCTTTTGA CCATTACTTC GCTCTTGACT GCAGTGATTA    1080

AGTTGGGCTT GAAAAAGGTC TTGGTGCAGG AGATGTACTC TGTTGAGACC TTGGCGCGCG    1140

TGGATATGCT CTGTCTGGAC AAGACGGGTA CCATCACCCA AGGAAAGATG CAGGTGGAGG    1200

CTGTTCTTCC GTTGACGGAA ACGTATGGTG AAGAGGCTAT TGCCAGCATC TTGACTAGCT    1260

ACATGGCCCA TAGTGAGGAT AAGAATCCAA CTGCCCAAGC CATTCGCCAG CGTTTTGTGG    1320

GAGATGTTGC TTATCCTATG ATTTCCAATC TTCCCTTCTC GAGCGACCGC AAGTGGGGGG    1380

CTATGGAGTT AGAAGGCTTG GGGACAGTTT TCTTAGGGGC ACCTGAGATG TTGCTTGATT    1440

CTGAAGTCCC AGAAGCTAGG GAGGCCTTGG AGAGAGGATC ACGTGTCTTG GTCTTAGCTC    1500

TCAGTCAGGA GAAATTAGAC CATCACAAAC CACAGAAACC ATCTGATATT CAGGCTCTAG    1560

CCTTGCTGGA AATCTTGGAC CCCATTCGAG AGGGAGCAGC AGAGACGCTG GACTATCTCC    1620

GTTCTCAGGA GGTGGGACTC AAGATTATCT CTGGTGACAA TCCAGTTACG GTGTCCAGCA    1680

TTGCCCAGAA GGCTGGTTTT GCGGACTATC ACAGCTATGT AGATTGCTCA AAAATCACCG    1740

ATGAGGAATT GATGGCCATG GCGGAGGAGA CAGCTATTTT CGGACGTGTT TCCCCTCATC    1800

AAAAGAAACT CATCATCCAA ACGTTGAAAA AGCGGGACA TACAACGGCT ATGACAGGGG    1860

ACGGGGTTAA TGATATCTTG GCCCTTCGTG AGGCGGATTG TTCTATCGTG ATGGCGGAGG    1920

GGGATCCAGC AACCCGTCAG ATTGCCAATC TGGTTCTCTT CAACTCAGAC TTTAATGATG    1980

TTCCTGAGAT TCTCTTCGAG GGTCGTCGCG TGGTCAATAA CATTGCCCAC ATCGCCCCGA    2040

TTTTCTTGAT AAAGACCATC TATTCCTTCC TGTTAGCAGT CATCTGTATT GCCAGTGCTT    2100

TACTAGGTCG GTCAGAGTGG ATTTTGATTT TCCCCTTCAT TCCGATCCAG ATTACCATGA    2160

TTGACCAGTT TGTGGAAGGT TTCCCACCAT TCGTTCTGAC TTTTGAGCGA AATATCAAAC    2220

CTGTTGAGCA GAATTCCTC AGAAAATCCA TGCTTCGTGC CCTACCAAGC GCTCTCATGG    2280

TCGTCTTCAG CGTCCTGTTT GTGAAAATGT TTGGCGCGAG TCAAGGTTGG TCTGAGTTAG    2340

AAATCTCAAC TCTACTCTAT TATCTCTTGG GGTCAATTGG TTTCTTATCC GTATTTAGAG    2400

CCTGCATGCC ATTTACCCTA TGGCGTGTCC TCTTGATTGT TTGGTCAGTA GGAGGTTTCC    2460

TAGCCACAGC TCTCTTCCCA AGAATTCAAA AACTGCTTGA AATTTCAACC TTAACAGAAC    2520

AAACGTTGCC TGTTTATGGT GTCATGATGT TGGTCTTTAC CGTGATTTTC ATCCTGACCA    2580

GTCGTTACCA AGCGAAAAAA TAAATCAAAA CCACCAGTGT GAACTGGTGG TTTGTTCTGC    2640

GGCTATAAGC CGCTTCTACC GGCCAGGGCC AAAGGCCCAC CGAAATAGCT TCCTCGCGCA    2700

CCACTTTCCC GAGCAGGTGC TAAAGCACCT TAGTTACTTC CTCTTATTTA TTTCGCCAGT    2760
```

447

```
AAACGGATCT ACTGACTCGA ATAACGTGAG CTGGTCTGCT ACTCTGTCTT CTTGTAATTG      2820

ATTCTGAATA TATTCAGCTA TCACTTTCTG ATTACGGCCT ACCGTATCTA CATAATAGCC      2880

TCTACACCAA AACTTGCGAT TGCCATATTT GTATTTTAAA TTCGCATGCT TATCAAAAAT      2940

CATCAAACTG CTCTTGCCCT TTAAATAGCC CATAAAGGAC GAAACACTAA GTTTCGGAGG      3000

AATACTGATA AGCATGTGAA TATGGTCTGA ACAAGCATTC GCTTCATGGA TTATTACACC      3060

CTTACGCTCA CATAAGTCAC GTATGATTCT TCCGATACTA GCTTTGTATC TGCCATAAAT      3120

GATTTGACGA CGATATTTGG GTGCAAAAAC AATATGATAT TTACAATTCC ATGTGGTATG      3180

TGATAAACTT TGATTATCCT CTCTCATGAG GTACCTCCTG TATGATATGT TGTAGTGGCG      3240

GAGAAACCAC TTCTATCTTA TCATTTTAGG AGGTTCTTTT TGTTACCACG CTAAAAGCTC      3300

TATGGAAcCA CTAGCATAGC TAGTGGTTTT CGGGAGACAA CAAGAAAGAC TGCAATCTGT      3360

GGATTGCAGT TTTTTATACG ATGGATCTAT CGTAGATCTG ATGTGCAAGG CCTACGTGCC      3420

GATCATCTAT CGGTGAACCC AAGAGCGACC CTCAAGCCTG CTTGGATTGA GGTAATAGAT      3480

TCAAATATCT GTAGTTAGAC TATTTGAAGT TTGATGTAAG AAAGAGAAAG CGACAGATTG      3540

AAGTAATTTT AACTCTCTTC TATTGCTAGA ACAAATGGTC GGATAGGTTG GTAGTTTGAA      3600

AATGAAGATG CTATCTATTG TTAAATGGAA CATAGTGTTA TTTATTAGAA AATCGTTTGG      3660

TTTATTTCTT ATCAAATACG AAAAGCAACT TAAATATTTC AACTAAAATA GATGTTATGA      3720

AGAAAAGGTA AAATGATTTT GGCATAGTGA GGTTCTGTTC TATTTGATAT CATATTTTTG      3780

ATAAAAACAA AAATGTCCAT TGCAAAGGAC AAAATGCGAA GTATATTATT TTTTGAAAGC      3840

GATATAATGG ATTCATAAAG GAGGTGTATC GTGTCTAGAA AACAAGAACA AATGGAAACG      3900

TTGTTGCTCC TTTTGCGAGA TAGTAAGGAT TATATATCTG CTAAAGTATT GGGAGAAAAA      3960

TTAAATTGCT CTGATAAAAC GGTTTATCGC CTTGTCAAGG GAATCAACAA AGATTGTCCG      4020

GTAGAAGCAT TCATTTTATC TGAAAAAGGC AGAGGTTTCA AATTAAATCC AAGAAGTTCC      4080

CTCGTGGACG TTGATGGGAA TTTTTACAGAG GCTTTTGATC CTGAAGTAAG GCGTGAAAAA      4140

TTACTAGAAC GTCTCTTGTT GACTGCTCCT AAGCCACATT CTATTTATGA TTTAGGAGAG      4200

GAATTCTACG TAAGCGAGTC AGTAGTACTA AAAGATCGTC AGATATTACA AGAGAGTCTA      4260

GCAATTTATG GGTTAGATTT AAAAATGAGA CAACGAAAGC TTTTTATTGA TGGGGATGAG      4320

GCTCAAATTC GTTCAGCCAT TCTAAATCTA CTGCCAATGT TTAATCAGTT GGATTTAGAG      4380

CAAATTACAC AGAATAAGGT TCAGCCTCTT GACGGAGAAC TTGCTCACTT TTGTTTGGGA      4440

TTACTGATTA CACTTGAGAG AGAATTGGGG GTAAACATTC CCTATCCATA TAATATAAAT      4500
```

448

```
ATTTTCTCTC ACCTGTATAT TTTTATCAGT AGGAATCGTC GTAGTACTAG TATTCATGTT      4560

GTAGCACCTT CAAAACCTAC TATTGTTGAT GAGAAAATTT ACAGTGTCTG TCAAAAAATT      4620

ATTCAAGAAA TTGAACAATA TTTTAGGATG AAGGTTGATG CAGTTGAGAT TGACTATCTT      4680

TATCAATACG TTGTATCTTC GAGATTGCAA AAACCATTTT CTTCCGGGAA GCTTCCTTTT      4740

TCTCAGCGAG TTTTAGATGT CACTCATTAC TATTTTAGCC GTATGTGTAT GGACAATAGA      4800

GAGATTGAAA CGACAGATCC TGACTTTGTT GACTTGGCGA GTCATATCAG TCCCTTACTG      4860

AGGAGATTAG ATAATAGAGT ACAGATTAAG AATAGTCTTT TATCACAAAT TCTTTTAACC      4920

TATCCTAATC TGGTTAAAGA GTTAACAACT ATTTCTAAAG AAGTGAGTCT AGTATTTGGT      4980

TTTGCTTCCT TGAGTCTGGA CGAGATTGGT TTTCTAGTCT TATATTTTGC ACGGTTTCAA      5040

GAAAAGCGAG CACGTCCTCT AAAAACAGTA GTGATGTGTA CATCAGGTGT CGGAACTTCA      5100

GAGCTTTTAC GAGCACGATT AGAAAAGCAA TTTTCTGAAT TGGATATTAT TGATGTAGTT      5160

GCTTATCATC AATTAGATGA GCTGATAAAT CTATATCCAG ATTTAGATTT CATTGTGACG      5220

ACGGTAGCTT TGCAGGAACC AGCAAGTGTC CCGTTTGTCC TAGTTAGTGT TTTTCTAACC      5280

GAGGGTGATA AACAACGTCT TCAAGCAAAA ATTCAGGAGA TAAACTATGA ATAATCTTTC      5340

GCTTGTCCTT ATGGATATAT CTGTTCAAAA TCGTCAAGAA GCCTACAAAG AATTAGCAAA      5400

TCAAATCAGC CTTCTTGTTT CTGAAGATAC AGAAAAAATA GAAGAGCTTC TATATTACCG      5460

TGAGAGACAG GGAAGTATAG AGGTTGCTAA AGGTGTTCTT CTACCACATT GTCAACCAAA      5520

CTTTCAACAT CATGTCTTAG TGATTACTAG ATTAAAATCA CCTATCAGAG AATGGTCGAA      5580

GGATATCCAG TGTGTTGACC TTATTATCGG TTTGGCCATT GCAGTATCAC AGGACAAGTC      5640

ATGTATTAAA ACATTGATGA GAAGACTAGC AGATGAATCA TTCATAAATC AATTAAAACA      5700

GTTAACAAAA GAAGAATTAC GGGAGATAAT ATATGGAAAT CAAAGATATT CTTAATGTGA      5760

GTCTGATCCA GACGGATTTA CAGATGCAGA GCAAAGAAGA GGTTTTTGAG GCATTAGCTC      5820

AACTATTGGT TGAGACGGGT TATGTGTCTG ATAGAGACCA ATTTATCGAA GGTCTTTATC      5880

AGAGAGAGGC AGAAGGACAG ACCGGTATTG GGAATTATAT TGCTATTCCC CATAGCAAGA      5940

GTTCTGCTGT GGAGAAGGCG GGGGTAGTCA TAGCTATAAA TCACAATGAG ATTCCTTGGG      6000

AGACCATTGA TGGGAAAGGG GTCAAAGTAA TTGTACTCTT TGCAGTTGGT GATGATACAG      6060

AAGCTGCTAG GGAGCATTTG AAGACCTTAT CACTCTTTGC TCGAAAACTT GGTAATGACG      6120

AAGTTGTTGC CAAATTAGTT CGGGCTCAGA CATCTGATGA TGTGATTGCA GCTTTTTGTT      6180

AATAAGAAAA AATTTTGGAG GGTATCCGTA TGAAAATTGT TGGTGTTGCA GCTTGTACTG      6240

TGGGAATTGC CCACACTTAT ATTGCACAGG AAAAATTAGA GAATGCCGCA AAGGTAGCTG      6300
```

449

```
GACATGTGAT TCATGTTGAG ACTCAGGGGA CAATAGGGGT AGAAAATGAA TTGAGTCAAG      6360

AGCAGATTGA TGCAGCGGAT GTAGTTATTT TAGCAGTTGA TGTTAAGATT TCTGGTATGG      6420

AACGCTTTGA GGGTAAAAAG ATTATCAAGG TTCCAACAGA AGTGGCAGTC AAATCTCCCA      6480

ATAAACTGAT TGCTAAAGCT GTTGAGATTG TTACGAAATA ACTGAAAATA TTTAAGGAGA      6540

AAATATATGT TGAAACACTT AAACTTAAAA GGTCACTTAT TGACAGCCAT TTCCTATATG      6600

ATTCCAATTG TTTGTGGTGC AGGATTCTTA GTTGCCATTG GTTTAGCAAT GGGGGGTGGT      6660

GTTCCTGACG CTCTTGTAGC AGGAAAATTC ACTATCTGGG ATGCTTTAGC AACTATGGGT      6720

GGTAAAGCCC TTGGTCTCTT GCCAGTTGTT ATTGCTACAG GTTTGTCTTA CTCGATTGCT      6780

GGTAAGCCAG GGATTGCACC AGGTTTTGTT GTTGGTCTAA TTGCCAATTC TGTTGGTTCA      6840

GGGTTTATCG GTGGTATCTT GGGAGGTTAT ATAGCTGGTT TCTTGGTTCA AGCGATTATT      6900

AAAAAGGTCA AAGTACCAAA CTGGATTAAA GGTTTAATGC CAACCTTGAT TATTCCTTTT      6960

GTAGCCTCTT TGGTAAGTAG TTTGATTATG ATTTATATTA TTGGAGCGCC TATCGCAGCC      7020

TTTACCAACT GGTTGACGAG CTTATTACAA AGCTTGGGAA GTGCTTCAAA TGGTTTGATG      7080

GGGGCAGTTA TTGGAATTCT CAGTGCTGTT GACTTTGGTG GCCCACTTAA TAAAACAGTC      7140

TATGCGTTTG TGTTGACTTT ACAGGCTGAA GGTGTGAAAG AACCATTGAC TGCTTTACAA      7200

TTGGTGAATA CTGCTACACC AGTTGGATTT GGATTGGCCT ATTTTATCGC GAAATTACTC      7260

AAAAAAAATA TCTATACTCA AGAGGAAATC GAAACATTGA AATCGGCTGT TCCTATGGGG      7320

ATTGTCAATA TTGTTGAAGG TGTAATTCCG ATTGTTATGA ATAACTTGGT TCCAGGTCTC      7380

ATTGCAACAG GTATCGGTGG TGCTGTTGGT GGTGCTGTTT CTTTGACAAT GGGTGCTGAT      7440

TCTGCTGTGC CATTTGGTGG AGTGCTTATG TTACCAACCA TGACTCGTCC AGTAGCTGGT      7500

ATTTGTGCCT TGTTAGCTAA CATTGTAGTC ACAGGACTTG TCTACGCGAT TTTGAAAAAA      7560

CCAATAAAAC ATGCAGAACC AGTTATGACT GTTGAAGAAG AGATTGATTT GTCAGATATT      7620

GAAATTTTGT AAGAGGGTAA CGATGTCAAG AATTGAATTT TCACCATCTT TGATGACCAT      7680

GGATTTGGAC AAAATTCAAAG AGCAGATTAC TTTTTTGAAT GATAAAGTAG CATCTTATCA      7740

TATCGATATT ATGGATGGCC ATTTTGTTCC CAATATTACC TTGTCTCCTT GGTTCATTCA      7800

AGAAGTTCAA AAAATTAGTG ACACACCTTT ATCAGTTCAT CTGATGGTCA CAGACCCAAC      7860

CTTTTGGGTA GATCAAGTTC TCGATTTACA ATGTGAGTAT ATTTGTATTC ATGCTGAAGT      7920

TCTGAATGGT CTTGCTTTTC GTTTGATTGA TAAAATTCAT GATGCAGGTC TAAAGGCTGG      7980

TGTTGTCCTT AATCCTGAAA CACCTGTTTC TACAATCTTT CCCTACATTG ATTTACTTGA      8040
```

```
                                  450
      CAAAGCAACT ATTATGACTG TAGATCCAGG TTTTGCAGGA CAACGCTTTT TGGAGTCTAC      8100

      CTTGTATAAA ATCCAAGAAC TCCGTCAGCT TAGAGTTCAG AATGGTTATC ACTACATCAT      8160

      TGAGATGGAT GGTTCTTCGA GTCGTAAGAC TTTCAAACAA ATTGATGTGG CAGGACCAGA      8220

      TATTTATGTT ATAGGTCGCA GTGGATTATT TGGTTTGGAT GACGATATTG CCAAAGCCTG      8280

      GGATATCTGT TCTAGAGATT ACGAAGAAAT GACCGGAAAA ACAATGCCAA TCAAATAATG      8340

      GTTTGAGAAG AAATTTATTA GTTAGGAGGA ATATATGTCA CTACAATCAG TTAACGCCAT      8400

      TCGTTTTCTT GGCGTAGATG CTATTAACAA ATCTAATTCT GGTCACCCGG GAATTGTCAT      8460

      GGGTGCTGCG CCAATGGCTT ATAGCCTATT TACAAAGCAC CTTAGAATTA CACCTGAGCA      8520

      GCCAAACTGG ATTAACCGAG ATCGCTTTAT CTTGTCTGCG GGTCATGGAT CAATGCTACT      8580

      GTATGCTCTC TTGCATTTAA CAGGGTATAA GGATGTATCC ATGGACGAGA TTAAAAATTT      8640

      CCGGCAATGG GGATCTAAGA CACCTGGTCA TCCTGAAGTG ACGCATACGT CTGGTGTGGA      8700

      TGCGACATCT GGTCCGCTTG GTCAGGGGAT TTCTACTGCC GTTGGTTTCG CCCAAGCAGA      8760

      GCGTTTTTTA GCTGCTAAGT ACAACAAAGA TGGTTTCCCT ATTTTTGACC ATTATACTTA      8820

      TGTTATCGCT GGAGACGGTG ACTTCATGGA AGGAGTGTCT GCGGAGGCGG CTTCTTATGC      8880

      AGGTCATCAA GCTTTAGATA AGCTTATCGT CCTCTACGAC TCCAACGACA TCTGCTTGGA      8940

      TGGTGAGACC AAAGATACTT TCTCTGAAAA TGTTCGCGTC CGTTACGATG CTTATGGTTG      9000

      GCATACAGTT CTGGTAGAAG ATGGAACAGA TTTAGCAGCA ATTTCTACAG CAATTCACAC      9060

      GGCCAAGTTT TCTGGTAAAC CGAGTTTGAT TGAAGTGAAA ACGGTAATTG GTTACGGCTC      9120

      ACCCAATAAA AGTGGTACAA ATGCTGTTCA TGGTGCACCA CTAGGAGCAG AAGAAACAGG      9180

      AGCAACTCGT AAGTTTTTGG GATGGGATTA CGATCCATTT GAAGTACCAG AGGAAGTATA      9240

      TTCTGATTTC AAGACAAATG TAGCGGATCG TGGTCAGGAG GCATACGATG CTTGGGCTAG      9300

      TTTGGTGTCT GATTACAAGG TTGCTTATCC CGAAGTTGCT AGTGAGATTG ACGCTATTGT      9360

      AGCTGGAAAA TCCCCTGTAA CCATTACTGA AAAAGACTTC CCTGTCTATG AGAATGGCTT      9420

      CTCTCAAGCA ACTCGTAATT CGTCCCAAGA TGCTATTAAT ACAGCAGCAG TTTTACCAAC      9480

      CTTCTTAGGT GGATCGGCAG ACTTAGCTCA CTCTAACATG ACCTACATCA AGGCAGATGG      9540

      CTTACAAGAT AAATATAATC CATTAAACCG CAATATTCAG TTTGGGGTAC GTGAATTTGC      9600

      CATGGGAACA ATCCTCAATG GAATGGCTCT TCATGGTGGT TTACGAGTTT ATGGCGGAAC      9660

      CTTCTTTGTT TTCTCTGACT ACGTCAAAGC TGCTATTCGG CTATCAGCCA TTCAGGAGTT      9720

      GCCTGTAACT TATGTCTTTA CCCATGATTC AATTGCCGTT GGTGAAGATG GTCCAACTCA      9780

      TGAACCAGTT GAACATTTGG CAGGTTTACG CTCAATGCCA AACTTGACTG TTATCCGTCC      9840
```

451

```
AGCGGATGCC CGTGAAACTC AAGCGGCTTG GCATCATGCC TTGACCAGTA CCACCACTCC      9900

AACTGTCATT GTCTTAACCC GTCAAAACTT GGTAGTTGAA GAAGGGACAG ACTTTGGTAA      9960

GGTCGCTAAA GGAGCCTACG TCGTGTATGA TACCCCGGGA TTTGATACTA TTATCATTGC     10020

TACAGGATCT GAGGTCAATC TAGCTATCAA AGCTGCTAAG GAATTGGTTT TACAAGGTGG     10080

TAAAGTACGT GTGGTATCTA TGCCCTCAAC CGAACTATTT GATGCTCAAG ATGCTACCTA     10140

CAAGGAAGAC ATTTTACCAT CTAAGACTCG TCGTCGTGTG GCCATTGAAA TGGCAGCGAC     10200

CCAAAGTTGG TACAAGTATG TTGGTTTGGA TGGCGCGGTC ATCGGTATTG ACATCTTCGG     10260

TGCGTCTGCC CCAGCTCAGA CTGTGATTGA TAATTATGGA TTTACGGTAG AGAATATCGT     10320

TGCTCAAGTT AAGTCCCTAT AGAAACCAAT TACAATGAAG ATACAGCTGT TGTCAGACTA     10380

GCAGATGTAG TGATAGACAC TAATCAGATG ATTGGTTATT TAAAAACTGT AATGAAAATG     10440

TAATAATTTA TCTACGAAAG TTATAGTAGA TAGTATACAC AATAGAGTAT ACCCTGAAAC     10500

GGTTGCGAAG TACGCTAATC ACTTTGCTAC TGATCTAGAT AGTTTCTTTA ATCAATAAAC     10560

ACAGCATCCA CAGATTGACT TAGGATATTG TAAGTTTTTT GAAAGCTAGA GAGAAGGTCT     10620

CTAAAATTAA AAAACGCATA GTATAGGATG TTGAAATGAT GAACTGCACC CCAAAAGTTA     10680

GACAGAAAAA AATCTAACTT TTGGGGTGTT TTTATTATGA AATTAACTTA TGATGATAAA     10740

GTTCAGTTCT ATGAACTTAG AAAACAAGGA TATATCTTAG AGAAGCTTTC AAATAAATTT     10800

GGGATAAATA ATTCTAATCT TAGGTACATG ATTAAATTGA TTGATCGTTA CGGAATAGAG     10860

TTCGTCAAAA AAGGGAAAAA TCGTTACTAT TCTCCTGATT TAAAACAAGA AATGATTCAT     10920

AAAGTCTGAC ATGAAGGCTG GACTAAAGAT AGAGTTTCTC TTGAATACGG TCTCCCAAGT     10980

CGTACGATAC TTCTTAACTG GCTAGCACAA TACAGGAAAA ACGGGTATAC TATTGTTGAG     11040

AAAACAAAAG GGAGAGTACC TGAGAGCGGA GAATGCCATC CTAAAAAAGT TAAGAGAACT     11100

CCGATTGAAG GAGGAAAAAG AGAAATAAGA AAGACAGAAA TTGTTCAAGA ATTAATGACT     11160

GAGTTTTCGT TAGATCTTCT TCTAAAAGCC ATTAAACTAG CTCGTTGGAC CTACTACTAT     11220

CACTTGAAAC AGCTAGATAA ACCAGATAAG GACCAAGAGC TTAAAGCTGA AATTCAATCC     11280

ATCTTTATCG AACACAAGGG AGATTATGCT TATCGCCGGG TTCATTTAGA ACTAAGAAAT     11340

CGTGCTTATC TGGTAAATCA TAAAAGAGTT CAAGGCTTGA TGAAAGTACT CAATTTACAA     11400

GCTAGAATGC GACAGnAACG AAAATATTCT TCTCATAAAG GAG                        11443
```

(2) INFORMATION FOR SEQ ID NO: 50:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 5338 base pairs

452

(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

```
CCAATTACAT TATATTATCA AAATCGTCGA AACTGGCTCC ATGAATGAGG CAGCCAAGCA        60

ACTCTTTATC ACTCAGCCAA GTCTCTCCAA TGCAGTGCGA GATTTGGAAA ATGAAATGGG       120

CATTGAGATC TTTATCCGCA ATCCCAAGGG AATCACCTTG ACCCGTGATG GCATGGAGTT       180

TCTCTCTTAT GCCCGTCAGG TTGTCGAGCA GACCCAGCTT CTGGAGGAAC GCTATAAAAA       240

TCCTGTCGCC CACCGCGAAC TCTTTAGCGT TTCGTCTCAA CACTATGCCT TTGTGGTCAA       300

TGCCTTTGTC TCTTTGCTCA AGAAAAGCGA TATGGAGAAA TACGAACTCT TCCTTCGTGA       360

AACTCGGACT TGGGAGATTA TCGACGACGT CAAGAACTTC CGCAGTGAGG TCGGGGTCCT       420

CTTCTTAAAC AGTTACAACC GTGATGTTTT AACCAAGATG CTGGATGACA ATCACCTGCT       480

AGCCCACCAT CTCTTCACAG CGCAACCGCA TATCTTTGTC AGCAAGACCA ACCCTCTGGC       540

AAAGAAAGAC AAGGTGAAAC TGTCTGATTT GGAGAATTTC CCTTACCTCA GCTATGACCA       600

AGGGACGCAC AACTCCTTCT ACTTTTCAGA AGAGATTCTT TCTCAAGAAC ACCACAAGAA       660

ATCCATTGTG GTCAGTGACC GTGCCACCCT CTTTAATCTC TTGATTGGTT TGGATGGTTA       720

TACCATTGCG ACAGGGATTT TGAACAGCAA CCTAAACGGA GACAATATCG TTTCTATCCC       780

ACTGGATATT GATGACCCGA TCGAGCTGGT CTATATCCAG CATGAGAAAA CCAGCCTATC       840

TAAGATGGGC GAACGCTTTA TAGACTATCT CCTAGAAGAA GTTCAGTTTG ATAGTTGAGA       900

AATGATAAGA ACCAATATGT AGGCTAGCAA CAACCTGCAC ATTGGTTCTT TTTACTTATA       960

ATTAAAAGTT TCCCCTGCCA ACTTATCAGC TAGCTTGGGA AAGAGAGTAT AAAACTTATG      1020

GGCTAGGTTC AACAAAATCG GGAGATTGAG TTCTCGTTTG TTTTTTCCTA TAATCTTGAC      1080

AATCTTTTTA GCCACTGCAT CTGGTTCTAG CAGGAAGCGA TCAACCGATT TAAGATAAGT      1140

TCCATCTGGG TCGGCTTGGT CGAAAAATCC TGTACGGATT GGTCCTGGAT TGACTGTTGT      1200

CACATAGACT CCATAGGGCA TAAGTTCGAG TCGCAGAGCA TTTGAAAAAC CAATAGCCGC      1260

AAACTTGGTC GCTGAGTAAA GACTAGACTT GCCAGTAGCT ATTAGACCTG CCATGCTGAC      1320

GATGTTGATG ATATGCCCTT TGCTGCTTTC CTTCATACGA GCCGCAAGGT GACGAGACAG      1380

ATTCATCAGG GCAAAGGTAT TGACCTCAAA CATCTGGTGA ATATCTTTAT CAGCAATCTG      1440

GTCAAATCCC TCAAAAATCC CGTAACCAGC GTTGTTAATC AAGACATCAA TCTTGCCATA      1500

GCGGAGATAA AGATCAGTTA CCAGAGCTTC TAGGGCTGAA TCGTCGGTAA TATCAATTTC      1560
```

453

```
AATCAATTCT GCATGGGAAT AATTTCCGTA GAGTTGGGCT AATTTTTCCT TATTTCTACC    1620

AAGCAAGATG AGTTGGTCAT TGGGCAGGAG TTTGACCATT TCTTGAGCTA GACCACCGCT    1680

AGCTCCGGTA ATGAGAATAG TAGGCATACT TATCCTTTCT GTGACTGCTA GATTTCCACT    1740

TCTTCCAAGT CTTTGACCAC ATGGACATTT TCAAAAATTG TGGCAGCGTC TTTCTTGAGT    1800

TTGCTAATAT CTTTTGAGAG GAAACGGGCA CTGATATGGT TGAGTAGGAG GCGTTTGGCA    1860

CCTGCTTCTA CCGCTACTTG TGCAGCTTGC ATATTAGTTG AGTGACCATG GTTACGAGCA    1920

ATTTTTTCAT CACCCTTGCC ATAAGTGGAC TCATGAACTA GGACATCTGC ATTGACAGCC    1980

AGACGCACAC TGGCACCCGT TTTTCGAGTG TCTCCTAAAA TAGTGATAAT CTTACCTGGA    2040

CGTGGCGCTG AGATATAGTC TGCTGCCTTG ATTTCAGTTC CGTCTTCCAA AACAAGATCC    2100

TGGCCGTTTT TGATTTTACC AAAAAGCGGG CCGAACGGAA CACCAGCAGC CTTGAGTTTT    2160

TCAGCATCCA GCGTCCCTTC TAGATCCTTT TGCATGACAC GATAGCCAAC ACAGAAAATA    2220

GTGTGGTCCA GCTCCTCTGC ATACACAGTG AATTTATCGG TTTCAAGAAT TTTACCCAGA    2280

GAATCTTGGT CAAACTCATG GAAATGAATG CGGTAGGGCA GACGAGAACC TGACACACGA    2340

AGGCTGGTTA AGACAAATGA CTTGATTCCT TGAGGTCCGT AGATTTCCAA ATCTGTCTGC    2400

TCTTCATTGG CCTGAAAGGC ACGGCTAGAA AGGAAACCTG GCAAACCAAA AATGTGGTCT    2460

CCATGCAGAT GGGTAATAAA GATTTTGCTG ACCTTACGTG GTCGAATTGT GGTTTCCAGA    2520

ATGCGATTTT GCGTACCTTC TCCACAGTCA AAGAGCCAAA CTTCGTTAAT CTCATCCAAA    2580

AGTTTCAGGG CGAGACTTGA AACGTTGCGG GCTTTAGAGG GCTGACCAGC CCCCGTTCCT    2640

AAAAATTGAA TATCCATTCG ATACTTTCTA ATTAATCAAT ATATAACATG GCTGTGCGGT    2700

TTTCCGATCG GAAATAGCGT TTGCCAGAAA AAGCAGCAGC TTCTTGCAAT AAATCCTCTT    2760

GGCTGTAGCC TTTGAGACGT TTTCGACCAT CAGCCAATCT TTCCAAATCA GTCAAAGCTG    2820

TGAGACTTTC TAGGCTGATA ACTTCCTCGT CCTCGACAGG CTTCATGTAA ATCTTACCAG    2880

ACTCTTCAAA GACTAATTGA TGGGGGAAAA TTTGCGCAAT TTCAAAGAGC AAGTCATCCG    2940

AGATTTTCTC CTCATTTTCA AAGAAAATCC GACCAAGGCC GTCACTCTCA TAACAAAAAC    3000

CAAAGGATTT ACCAGACAGA TTAAGCCGAA TAAAAGGCTT ATTTTCTAGG GTGAAACTTG    3060

GCTCAGTATT GTAAAGATTC AGTTCCTGAC TGAGTTCTGC AAAATAATCC GTCGCAGCCT    3120

GAGGACTCTT TTTCTGATAG AGTTCTGCAA AGTAGGCATT AACAACACTT GGCGGAGGTG    3180

TAATAAGTGT TAACTGCTCC TGATCTGTTT TACCAGCTAG AAGCTGATCC AGATAGACCT    3240

TGTCCAGACT TGTATAACCT CCATACTTTA GAGCCAAAGT TTTAATATCA GTCATAAAAT    3300
```

454
```
TCTTCTAACC TCCATTTATT TTTCTCGGAA ATGTAGCCTG TAATCACTTC GCCGTCTTCC      3360

TGATAATCAC GTTCTTCCAG AATTGCAACA CTCTCTAAAT CATGAATCTT GTAGGACTTT      3420

GAAAAAGGCA CTCGCAGGGT AAATGCTTCA AAAATTTCCT TAATCTTATC TAGCAATAAT      3480

GCTTGCAAGT TTTCACGACT GTCCTCAGAC TTGGCAGAAA TGAGGGTATA TGGCGTTTGG      3540

GTAGGCGTGA AATCCTCCAC CAAATCCGCT TTATTATAAA GCGTCAAGTG AGGAATATCT      3600

TCCATGTCCA GGTCTTTCAT GATGGAGAGA ACCGTTTTTT CATGCTCCTC GTGGTAAGGA      3660

TTGCTAGCAT CGATAACATG AACCAGAAGG TCCACATGCT TGCTTTCTTC CAAGGTTGAC      3720

TTGAAACTGG ACACCAACTC TGTCGGCAAA TCTTGGATAA AGCCAACGGT ATCTGTCAAA      3780

GTTACTTGGA GATTGCCTCC CAGATGAATA CTCTTGGTTG TCGCATCCAG AGTCGCAAAG      3840

AGCTCATCTG CTTCATACTG GGTCTTACTG GTCAAGATGT TCATGATAGT TGATTTCCCA      3900

GCATTAGTAT AACCAATCAA ACCAATCTTA AAAGTGCTAG ACTCCAAACG TTTTTCTCTG      3960

ACAGTCGCAC GATTTTTCTC AACCACCTTG AGCTGGCGCT CGATATCCGT GATTTGATTG      4020

CGAACGCTAC GACGGTTCAG CTCCAGCTGG CTTTCACCAG GACCACGGGA ACCAATTCCC      4080

CCTgCCTGAC GGCTGAGCAT AATCCCCTGA CCAACCAAGC GAGGCAAAAG GTATTTGAGT      4140

TGGGCTAGGT GGACTTGGAG CTTCCCTTCA TGGCTTCGAG CCCGCATGGC AAAGATATCC      4200

AAAATCAACT GCATACGGTC AATGACCTTA ACACCGAGAA CTTCCTCTAG ATTGACATTC      4260

TGCCTTGGGG TCAGACGATT GTTGACGATG ACAGTAGTGA TTTCTTCTGC ATCCACCATA      4320

AGCGCAATCT CTTCCAACTT ACCAGAGCCG ACGAAGGTCT TGGAATCATA TTTTTCACGT      4380

TTTTGTCTGT AGCTATCTAC AACGACTGCC CCTGCCGTTT TCGCTAAACT AGCCAATTCT      4440

TCCATGGAGA GGTCAAAACT GTCCATACCC TGCAATTCCA CACCAATCAG CAGGACTCGC      4500

TCCTCTTTTT TCTCCGTTTC AATCATCTAA AAACTCCTCT ATCTGGCTTA AAATGCGGTC      4560

TTGTACACCA GATTCTCCAA TCTGATAAAA GGTGACCTGC ATGCGATTAC GGAACCAGGT      4620

CAGCTGACGC TTGGCAAAAC GACGAGTCGC CTGTTTAAGA CTCTCACTAG CTTCCTCCAA      4680

GGTCTGCTCT CCACGGAAAT AAGGAAAGAG TTCCTTATAG CCAATTCCTT TAGCAGCCTG      4740

TACATTAGGG GAATGGTCAA ACAGCCACTT GGCCTCATCC AAAAGCCCAG CCTCAAACAT      4800

CAAATCCACT CGGTGGTTGA TACGCTCATA AAGTTGACTA CGTTCATCAT CCAAGCAGAT      4860

AATCAGCGGT TCATACAAGG TCTCTTGATT TTCCAAATCC TGACCAAAAT GGGCAATTTC      4920

TAAGGCACGC ATAGCACGAC GACGATTAAA CTGGGGAATC TCAAGGCCTG CTTGATCCAC      4980

CAAATGGGCT AATTCCTCAT CTGAATATGG CTCCAAACTA GCTCGATAAG CTAAAATCTC      5040

CTCATGAGGA GTCTCCCCAC CTAGGTGGTA ACCTTCTAGC AAGCTCTGGA TATAAAGTCC      5100
```

455

AGTCCCACCG GCGATAATGG CTAGCTTGCC ACGGTTGTGA ATACCCTCAA TAGTCATCTT   5160

AGCTTCTGAA ACAAAATCAA AAGCCGAGTA AGACTCGGTT ATCTCTCTAA CATCGATTAA   5220

ATGATGAGGA ACAGCTGCCT GCTCTTCTGG ACTAGCCTTG GCCGTCCCAA TATCAAGTCC   5280

TCGATAGACT TGCTGGCTAT CTCCACTAAC CACTTCGCCA TTAAAACGCT TTGCGGGG   5338

(2) INFORMATION FOR SEQ ID NO: 51:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 19446 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

CGGAAACCCA TCTAGTCTCC ATCGTTTGGG AGACCAAGCA ACACGAATCT TAGATGCTTC   60

TCGCCAACAG ATTGCAGATT TAATCGGTAA GAAAAGCGAT GAAATCTTCT TTACCTCGGG   120

TGGAACAGAA GGGGATAACT GGCTTATCAA GGGTGTGGCC TTTGAAAAAG CTCAGTTTGG   180

CAAGCACATC ATTGTTTCAG CCATTGAACA TCCAGCAGTC AAAGAGTCAG CCCTCTGGTT   240

GAAAAGTCAA GGATTTGAAG TGGATTTTGC TCCAGTTGAT AAGAAAGGCT TGGTCGATGT   300

TGAGGCGTTA CAGGTTTGAT ACGGCATGAT ACAATCCTCG TTTCCATCAT GGCTGTGAAC   360

AATGAAATCG GCTCTATCCA ACCTATTGAG GCTATTTCAG AATTCTTGGC AGACAAGCCG   420

ACTATTTCCT TCCACGTTGA TGCGGTTCAG GCGCTTGCCA AAAATTCCGAC TGAAAAGTAT   480

CTGACAGAAC GGGTGGATTG CGCGACTTTC TCTAGTCACA AGTTCCACGG GGTTCGAGGT   540

GTTGGCTTTG TCTATATCAA ATCTGGCAAG AAGATTACAC CTCTTCTTAC AGGTGGTGGC   600

CAGGAGCGAG ATTATCGTTC GACAACTGAA AATGTGGCAG GGATTGCAGC GACAGCCAAG   660

GCCCTCCGTT TGTCTATGGA AAAGCTAGAT ATCTTTAGGA GCAAGACTGG GCAGATGAAG   720

GCAGTGATTC GCCAAGCTCT TCTGAACTAT CCGGATATTT TTGTCTTTTC AGATGAGGAA   780

AACTTTGCAC CTCATATTCT GACTTTTGGA ATCAAAGGTG TTCGAGGTGA AGTCATCGTT   840

CACGCCTTTG AAGACTATGA TATTTTCATC TCAACAACCT CAGCTTGTTC ATCTAAGGCA   900

GGAAAACCAG CCGGTACCTT GATTGCCATG GGAGTGGACA AAGATAAGGC CAAGTCAGCT   960

GTGCGTCTTA GCCTAGACTT GGAAAATGAT ATGAGTCAGG TCGAGCAGTT TTTGACCAAG   1020

TTAAAATTGA TTTACAATCA AACTAGAAAA GTAAGATAGG AGCATTCATG CAGTATTCAG   1080

AAATTATGAT TCGCTACGGA GAGTTGTCAA CCAAGGGTAA AAACCGTATG CGTTTCATCA   1140

456

```
ATAAACTTCG TAATAATATT TCGGACGTTT TGTCTATCTA TACCCAAGTT AAGGTAACAG    1200

CAGATCGCGA CCGTGCCCAC GCTTACCTCA ATGGAGCTGA TTACACAGCA GTTGCAGAAT    1260

CTCTCAAACA AGTTTTTGGA ATTCAAAACT TTTCTCCTGT TTATAAGGTT GAAAAATCTG    1320

TAGAAGTTTT GAAGTCTTCT GTCCAAGAGA TTATGCGGGA CATCTACAAG GAAGGTATGA    1380

CCTTTAAGAT TTCTAGCAAG CGTAGCGACC ACAACTTTGA ACTTGATAGT CGTGAACTCA    1440

ACCAAACACT TGGAGGGGCT GTATTCGAAG CCATTCCAAA TGTGCAAGTT CAAATGAAAA    1500

GTCCTGACAT CAATCTTCAG GTGGAGATTC GTGAAGAAGC AGCCTATCTT TCTTATGAAA    1560

CCATTCGTGG GGCTGGTGGT TTGCCAGTTG GAACTTCAGG TAAAGGGATG CTCATGTTGT    1620

CAGGAGGGAT TGACTCACCT GTAGCAGGTT ATCTTGCTCT TAAGCGTGGG GTGGATATCG    1680

AGGCAGTTCA CTTTGCTAGT CCACCATATA CTAGTCCTGG TGCCCTCAAG AAAGCGCAGG    1740

ACTTGACCCG TAAATTGACC AAGTTTGGCG GAAATATCCA GTTTATAGAG GTGCCTTTCA    1800

CAGAGATTCA AGAGGAAATC AAAGCCAAAG CGCCAGAAGC TTATTTGATG ACTCTAACTC    1860

GTCGCTTTAT GATGCGGATT ACTGACCGTA TTCGTGAGGT ACGAAATGGT TTGGTTATCA    1920

TCAATGGGGA AAGTCTAGGT CAAGTAGCCA GCCAAACCCT TGAAAGTATG AAGGCTATCA    1980

ATGCTGTTAC CAACACTCCC ATCATTCGTC CTGTGGTTAC CATGGACAAG TTGGAAATCA    2040

TTGACATCGC CCAGGAAATC GATACCTTTG ACATTTCAAT CCAACCGTTT GAAGACTGTT    2100

GTACCATTTT TGCACCAGAT CGTCCAAAAA CAAATCCTAA AATTAAGAAT GCGGAGCAGT    2160

ACGAAGCGCG TATGGATGTT GAAGGCTTGG TTGAGCGAGC AGTGGCTGGA ATCATGATTA    2220

CTGAAATCAC ACCTCAAGCC GAAAAAGATG AAGTTGATGA CTTGATTGAC AATCTGCTCT    2280

AATTCAGAAA ATCCAAAAGA ATAGCGAAAA TCAGTAAAAA AAGTTAGTTT TTTCTCTAAA    2340

AACAGGTAAA AAACTAACTT TTTTTATTTT TATGATATAA TGATATAAAA TTTTGAATAT    2400

AGAGAGTTTT CTGACAATGA ATCAATCCTA CTTTTATCTA AAAATGAAAG AACACAAACT    2460

CAAGGTTCCT TATACAGGTA AGGAGCGCCG TGTACGTATT CTTCTTCCTA AAGATTATGA    2520

GAAAGATACA GACCGTTCCT ATCCTGTTGT ATACTTTCAT GACGGGCAAA ATGTTTTTAA    2580

TAGCAAAGAG TCTTTCATTG GACATTCATG GAAGATTATC CCAGCTATCA AACGAAATCC    2640

GGATATCAGT CGCATGATTG TCGTTGCTAT TGACAATGAT GGTATGGGGC GGATGAATGA    2700

GTATGCGGCT TGGAAGTTCC AAGAATCTCC TATCCCAGGG CAGCAGTTTG GTGGTAAGGG    2760

TGTGGAGTAT GCTGAGTTTG TCATGGAGGT GGTCAAGCCT TTTATCGATG AGACCTATCG    2820

TACAAAAGCA GACTGCCAGC ATACGGCTAT GATTGGTTCC TCACTAGGAG GCAATATTAC    2880

CCAGTTTATC GGTTTGGAAT ACCAAGACCA AATTGGTTGC TTGGGCGTTT TTTCATCTGC    2940
```

457

```
AAACTGGCTC CACCAAGAAG CCTTTAACCG CTATTTCGAG TGCCAGAAAC TATCGCCTGA     3000

CCAGCGCATC TTCATCTATG TAGGAACAGA AGAAGCAGAT GATACAGACA AGACCTTGAT     3060

GGATGGCAAT ATCAAACAAG CCTATATCGA CTCGTCGCTT TGCTATTACC ATGATTTGAT     3120

AGCAGGGGGA GTACATCTGG ATAATCTTGT GCTAAAAGTT CAGTCTGGTG CCATCCATAG     3180

TGAAATCCCT TGGTCAGAAA ATCTACCAGA TTGTCTGAGA TTTTTTGCAG AAAAATGGTA     3240

AGTTAAGAAA GGAAAAAACG AAATGCATAT TGAACATCTT AGCCACTGGA GTGGTCATCT     3300

TAACCGTGAA ATGTACCTTA ACCGTTATGG ACATGGTGGG ATTCCAGTTG TGGTCTTTGC     3360

TTCATCAGGT GGTAGTCACA ACGAATACTA TGATTTTGGC ATGATTGATG CCTGTGCTTC     3420

CTTTATCGAG GAAGGCCTTG TCCAGTTCTT TACCCTATCT AGTTTGGATA GTGAGAGCTG     3480

GTTGGCTACT TGGAAAAATG CTCATGACCA AGCGGAAATG CACCGTGCCT ACGAACGTTA     3540

TGTGATTGAG GAGGCCATTC TTTTATCAAG CACAAGACAG GTTGGTTTGA TGGCATGATG     3600

ACGACAGGTT GCTCTATGGG AGCCTATCAT GCACTCAATT TCTTCCTCCA GCATCCAGAT     3660

GTCTTTACCA AAGTGATTGC TCTCAGTGGT GTTTACGACG CACGTTTCTT TGTCGGTGAT     3720

TACTACAACG ATGATGCTAT TTACCAAAAC TCGCCAGTAG ATTATATTTG GAACCAAAAC     3780

GACGGCTGGT TTATTGACCG TTACCGTCAG GCAGAGATTG TGCTGTGTAC GGGGCTTGGA     3840

GCCTGGGAAC AAGATGGTTT GCCATCCTTT TACAAGCTCA AAGAAGCCTT TGACAAGAAA     3900

CAAATTCCAG CCTGGTTTGC TGAATGGGGA CATGATGTCG CCCATGACTG GGAATGGTGG     3960

CGTAAACAAA TGCCTTATTT CCTCGGTAAT CTCTATTTAT AAAAGGAGTT ACCTATGAAT     4020

TACCTTGTTA TTTCTCCCTA CTATCCACAA AACTTTCAAC AGTTTACCAT CGAACTAGCT     4080

AATAAAGGCA TCACAGTCTT GGGAATTGGT CAAGAGTCTT ACGAGCAATT GGATGAGCCC     4140

TTGCGCAATA GCTTGACCGA GTATTTTCGT GTTGATAATC TTGAGAACAT AGATGAAGTC     4200

AAACGTGCAG TTGCTTTTCT CTTTTATAAA CATGGTCCAA TTGGCCGCAT CGAGTCTCAC     4260

AATGAATACT GGCTTGAGCT AGACGCAACA CTCAGAGAAC AATTCAATGT TTTTGGTGCC     4320

AAACCAGAGG ATCTCAAAAA GACGAAATAT AAGTCTGAAA TGAAGAAACT TTTTCAAAAAA    4380

GCAGGTGTTC CTGTGGTACC TGGAGCTGTT ATCAAGACGG AAGCAGATGT TGATCAAGCA     4440

GTGAAAGAAA TCGGTCTTCC AATGATTGCC AAACCTGATA ATGGAGTGGG AGCAGCCGCA     4500

ACCTTTAAAC TTGAGACAGA AGACGATATC AATCACTTCA AGCAAGAATG GGACCATTCA     4560

ACCCTTTATT TCTTTGAAAA ATTTGTCACT TCCAGCGAAA TCTGTACCTT TGACGGGCTC     4620

GTGGACAAGG ATGGAAAGAT TGTCTTCTCA ACAACCTTTG ACTACGCCTA TACACCGCTT     4680
```

458

```
GACCTCATGA TTTATAAGAT GGACAATTCT TATTATGTGC TCAAGGATAT GGATCCTAAA      4740

CTGCGCAAGT ATGGGGAAGC AATTGTCAAA GAATTTGGTA TGAAAGAACG GTTTTTCCAT      4800

ATTGAGTTCT TCCGTGAGGG GGACGATTAT ATTACCATCG AGTACAATAA CCGCCCTGCA      4860

GGTGGTTTTA CCATTGATGT TTATAACTTT GCTCATTCCT TGGACCTTTA TCGTGGCTAT      4920

GCAGCTATTG TCGCAGGAGA GGAGTTCCCG GCGTCAGACT TTGAAACTCA GTATTGTTTG      4980

GCTACTTCTC GCCGTGCAAA TGCTCACTAT GTTTATTCAG AAGAGGATTT GCTTGCCAAA      5040

TATAGCCAGC AGTTCAAGGT TAAAAAAGTC ATGCCAGCTG CCTTCGCGGA ACTTCAAGGA      5100

GATTACCTGT ATATGCTGAC CACTCCGAGT CGACAAGAAA TGGAGCAGAT GATTGCAGAT      5160

TTCGGACAAC GTCAAGAATA AGAACTATCG GATTAAGGAA ATTAACTCCC TTAATCCTTT      5220

TGTTTTGTCT GATAAAAAAT AAGAGCATCC CAACAAGGTA GCTATCATAA AACTTGTTCG      5280

ATAACTATTT GAAGCAGGAT TAGGTGGTCA GAAATTAAAT TTTAATATTT CAATTGAGTC      5340

ATAGTATTGT GTTTGCGTAT CCTTAAATCA GCTAAAAGGA TCCATGACGA CACCTATACG      5400

ATATAGTTTT CAAGATACCA AACAAGTCTA TTAATATTCA ATGAAAATCA AAGAGCAAAC      5460

TAGGAAGCTA GCCGCAGGTT TCTCAAAACA CTGTTTTGAG GTTGTGGATA GAACTGACAG      5520

AGTCAGTATC ATATACTACG GCAAGGTGAA GCTGACGTGG TTTGAAGAGA TTTTCGAAGA      5580

GTATAAAATA TTCAGGTGAC GCATAGATAT AGTTAATTGA AGCTTTGTTT GAAATCTGAT      5640

AAAATAATGA TATTACTAAG TTTTAAAAAC TAAAGAAAAG GGAAGATATG ATTACAGGCG      5700

AATTAAAAAA TAAAATCGAT CAGCTGTGGG AAATTCTTTG GACAGAAGGA AACGCAAATC      5760

CTTTAACAAA TATTGAACAG TTGACTTATC TCTTATTTAT GAAAGATTTG GATAGTGTCG      5820

AGCTTGGACG TGAAAGTGAT GCTGAATTTC TAGGGATTCC TTATGAGGGA GTTTTTCCAA      5880

AAGATAAACC TGAATACCGT TGGTCAACTT TTAAAAATAT AGGAGATGCT CAGGAAGTTT      5940

ATCGTTTAAT GACTCAGGAG ATTTTTCCGT TTATTAAAAA TCTCAAGGGG GATACAGATG      6000

ATACAGCCTT TTCACGATAT ATGCGAGAAG CTATTTTTCA AATAAATAAA CCTGCTACGC      6060

TTCAAAAGGC AATTTCTATC TTAGATGTTT TTCCAACTAG GGGATTAGAT GTAGATTTTG      6120

ATAATGACAA ACAAAGTATT ACTGATATCG GAGATATCTA TGAATATCTG TTATCAAAAT      6180

TGTCGACCGC AGGTAAAAAT GGACAGTTCC GTACACCTCG TCACATCATC GATATGATGG      6240

TTGAGTTGAT GCAACCGACT ATCAAAGATA TCATCTCAGA TCCCGCTATG GGTTCTGCTG      6300

GCTTCTTAGT ATCTGCTAGC CGTTACTTAA AGCGTAAGAA AGATGAATGG GAAACCAATA      6360

CAGATAATAT CAATCATTTT CATAATCAGA TGTTTCATGG AAATGATACG GATACGACTA      6420

TGTTGAGACT TGGGGCGATG AACATGATGC TACATGGAGT AGAAAATCCA CAAATCAGTT      6480
```

459

```
ACCTTGACTC GCTGTCTCAA GATAATGAAG AAGCCGATAA ATATACTTTG GTTTTAGCAA       6540

ATCCTCCTTT TAAGGGCTCA CTTGACTACA ATTCAACCTC TAATGACCTT CTTGCAACCG       6600

TAAAAACCAA AAAAACAGAA TTACTCTTTC TTTCTCTTTT CTTGCGAACT TTAAAACCAG       6660

GTGGACGAGC AGCAGTTATC GTACCTGATG GTGTCCTTTT TGGTTCGTCT AAAGCTCATA       6720

AAGGAATTCG TCAGGAAATT GTAGAGAATC ATAAGCTTGA TGCTGTAATC TCAATGCCTA       6780

GTGGTGTGTT CAAGCCTTAT GCTGGAGTTT CAACTGCCAT TCTCATCTTT ACAAAAACTG       6840

GTAATGGTGG TACTGACAAA GTCTGGTTTT ACGATATGAA AGCGGATGGT TTAAGTTTGG       6900

ATGATAAGCG ACAACCGATT AGCGACAATG ATATTCCAGA TATTATCGAA CGCTTTCATC       6960

ATCTTGAAAA AGAAGCAGAA CGTCAGAGAA CGGATCAATC TTTCTTTGTT CCAGTTGCTG       7020

AGATAAAGGA AAATGATTAT GATTTGTCTA TCAATAAATA TAAAGAGATT GAGTATGAAA       7080

AAGTTGAGTA TGAACCAACA GAAGTCATAT TAAAGAAAAT CAATGATTTA GAAAAAGAAA       7140

TTCAAGCTGG CTTGGCTGAA TTGGAAAAAT TACTCAAGTA GGGAGGTGGC TGTATGAAAA       7200

AAGTGAAGTT GGGGGAAGTC TTATCTCTAA AAAAAGGCAA GAAAGCCACT GTACTTGCTG       7260

AACAAACAAC TCTAAGCCAA CGTTATATTC AAATAGATGA TTTAAGAAAT AATAATAATT       7320

TAAAATTCAC TGAAAGTTTA AATATGACTG AAGCACTCCC AGATGATATT CTGATAGCAT       7380

GGGATGGAGC TAATGCAGGA ACAGTTGGTT ATGGATTATC GGGAGCTGTT GGTAGTACAA       7440

TTACGGTCTT AAAAAAGAAT GAGCGATACA AAGAAAAAAT TATATCAGAT TACTTGGGAG       7500

TCTTTTTGGA AAGTAAATCG CAGTATTTAC GAGATCATTC AACAGGTGCA ACAATTCCTC       7560

ATTTAAACAA GAATATATTA CTTGATTTAC AATTAGAATT GCTAGGTATC GAAGAACAAG       7620

AGAACATTAT CTGTATTCTT AATACGATTA AAAGGCTTAT TACTAAAAGA AAATTTCAGT       7680

TAGATGAACT AAACTTGCTC GTCAAATCCC GATTTAACGA GATGTTTGGG GAAAATAAAA       7740

TATTTGAAAG CATTGATAAC TTATTTGATA TTATAGATGG TGATAGGGGC AAAAATTATC       7800

CTAAATCAGA TGAGTTGTTT AGTGAGGAGT ACTGTTTATT TTTAAATACA AAGAATGTTA       7860

CTAAAAACGG ATTTTCATTC GATACAAAGC AATTTATCAC TAAAACAAAG GATAAATTAC       7920

TTCGAAAAGG CAAACTTGAG CGTTATGATA TAGTCTTGAC AACAAGAGGT ACTGTTGGAA       7980

ATGTAGCGTA CTACGATGAA TTAATAAAAT ATAAACATTT ACGTATAAAT TCAGGTATGG       8040

TAATATTACG TCCCAAGACA CCAAATCTAA ATCAGAAATT TATTATCCAT GTTTTAAGGA       8100

ATAATAATTA TAGTCGAGTG ATATCAGGAA GTGCTCAGCC TCAGTTACCA ATTACAAAAT       8160

TAAAAAAAAT ACTTCTCCCC CTCCCCCCAC TAGCCCTCCA AAATGAGTTC GCAGACTTTG       8220
```

```
                                  460
TAGTCCAGGT CGACAAATCA CAATTTGCTT GTGAGATAGC TATAAAAGTG TGGAGAAATA      8280

GCTTGAAATT TAGTATAATA TAGCTAAACT ATTTGTTTAA AGTGAGAAAA AAATGGGAAA      8340

TTTTAGCTTT CTTTTAAAAA ATGACGAATA TGAATCTTTT TCAAAACCTT GCATTGAAGC      8400

TGAGAATATG ATTGCTACAT CAACTGTGGC TACTGCCTTT ATGGCGCGTC GTGCTTTAGA      8460

GCAGGCTGTC CATTGGATAT ATAGTCACGA TTCATATTTA GAAGCTCCCT ATCGTGCTAC      8520

TCTATCTTCT TTAGTATGGG ATGATGATTT TAGGGATATC GTAGATTCTG AACTCCACAA      8580

GCAGATAGTT CTGTTGATTC GGTGGGGAAA CCATGCTGCT CATGGTGGTG AAATTAAGGA      8640

ACGAGAAGCG ATTTTAGCTT TGCATCATTT GTATCAGTTT GTTAATTTTA TCGATTATTG      8700

TTACAGCAAT GAGTTTGTGG AGCGTTATTT TGATGAGAAG TGCTTACCAC TTTCAGCAAA      8760

CATCAAATAC CGAGAAACTC CACAATCTAT GATAAAGTTA CAAGACAGTT TACCAGAACT      8820

GCCTGATTTT CATGAACAGA TGGCTGCTCA GTCCGTAGAA GTTCAAGAGA CTTATACTGA      8880

AAAACGTGAG ACTGCAGCGC AACGGCAAGA TGTGCCTTTC CATATTGATC AATTATCTGA      8940

GGCAGAGACA AGAAAGCTCT TTATTGATAT CGATCTCCGT TTAGCAGGAT GGATATTTGA      9000

AGAAAACTGT CGTGTTGAGA TAGCCGTTGA TGGTCTCAAG CACGGTTCAG GAATTGGTTA      9060

CTGTGACTAT GTACTTTATG GTAAAAATGG GAAAATTTTA GCGATTGTGG AGGCTAAAAA      9120

AGCCTCTGTC AATCCAGAAG TAGGGGAAGT ACAGGTCAAA GAATATGCTG AAGCTTTGGA      9180

GAAACATATC GGCTATCAGC CAATTTGCTT TATTACAAAT GGGTTGAAGC ACTATATACT      9240

TGATGGTCCG AACCGCCGCC AGATTGCAGG CTTTTACTCT CAAGAAGAAT TGCAATTAGT      9300

GATGGATAGA CGTCATCTTC AAAAACCGCT TGAGGATATT TCTAGTAAAA TTAGGGACGA      9360

TATTTCCGGG CGTCACTACC AAAAACATGC CATTGCAAGC GTTTGTGAAG CTTTCTCTGA      9420

TCATCGTAGA CAGGCACTTT TGGTTATGGC AACTGGGGCG GGGAAAACTC GTACAGCAGT      9480

TTCTCTAGTT GATATCTTAT CACGTCATAA CTGGGTAAAA AACGTTCTCT TCTTAGCCGA      9540

TAGAACTTCC TTGGTTAAGC AAGCATATGA TTCGTTTAGA AAATTACTCC CAGATCTTTC      9600

CGTTTGTAAC TTCTTAGAAG ATAAAGAAGG AGCTCAATCA AGTCGCATGG TCTTTTCAAC      9660

TTATCCGACC ATGATTGGAG CGATTAGTGG TCAAGAAGAA GTAAATCAAC GCCCTTTCAC      9720

TGTTGGGCAT TTTGACCTTA TCATAATTGA CGAATCTCAC CGTTCTATTT ATCAGAAATA      9780

CAAGTCCATT TTTGATTATT TTGATGCAAG AATTGTAGGC TTAACAGCTA CTCCGCGTCA      9840

AGATTTAGAT AAAAACACCT ATGGATTCTT TAATTTGGAG AATGGGGTTC CAACATATGC      9900

ATATGATTTG GAAGAGGCTG TTAAAGACGG ATATTTAGTA GCCTATCATT CTATCGAAAC      9960

CAAACTGAAA CTACCTACGG ATGGTCTACA TTATGATGAT TTGTCCGAAG AAGAAAAGGA     10020
```

461

```
ACATTTTGAT AGCAAATTTG AAGACAATAG CTGTGAAAAA GATATTGATG GGAGTGTATT    10080

TAATTCCTTT ATTTTCAATA AAAGTACAGT AGAAATTGTT TTAAATGAAC TCATGACAAG    10140

AGGAATTCAG ACAGCCTCGG GTGATGAAAT TGGTAAAACT ATTATTTTTG CTAAAAATCA    10200

TGATCATGCG GAATATATCA GAGGTATTTT TAACAACCGC TATCCTGAAA AAGGGAGCGA    10260

CTATGCTCAG GTGATTGATT ATAGTATTAA GCATTATCAG ACCTTGATTG ATGATTTTAA    10320

AATTAAGGAG AAGTATCCTC AAAATTGCGAT TTCTGTCGAT ATGTTAGATA CAGGTATTGA    10380

TGTACCAGAG GTTGTTAATT TAGTCTTCTT CAAGAAAGTA CGCTCTAAAA CTAAGTTTTG    10440

GCAGATGATT GGTCGAGGAA CCCGTCTATG TAAAGATTTA TTTGGACCTG AGCAGGATAA    10500

GGAAAACTTC TTGGTATTTG ATTATGGGGA CAATTTTGAT TATTTTCGTG CAGATCCAAG    10560

AGATGGAGAG GGTCGTCACA TTGTTTCGCT GACTCAGCGT TTATTTAATA TCAAAGTGGA    10620

CTTGATTCGA GAACTTCAGG GACTCCAATA CCAAGAAGAT CAGTTTGCGA GAGCATACCG    10680

TCAGCAGCTT GTCTCGGAAC TTCAAGGTCG TATAGAGAGC TTAAATGAGT TGGACTTCAG    10740

GGTTCGTATG GTTTTAGATA CAGTTTATAG CTATAGGAAA TTGGAAAGTT GGCAGAATCT    10800

AACTGCTGTT ACAAGTGAAA CCATTCAAAA AAATCTCTCT CCGCTTTTAT TTGATGAAGA    10860

TAAAGAAGAT GAGATGGCGA GGAGATTTGA TTTGTGGTTG CTTCATATTC AGTTGGGGCA    10920

ACTGACAGCT AAATCTTCCA CTGTTCATAT TTCCCAAGTG ATGAAGACGG CTAGAGCTCT    10980

TTCTGCTATT GGCAATATCC CGCAGGTTTT TGAGCAGGCT GAAATTATCA GGAAAGTACA    11040

GGAGCCTGAA TTTTGGAAAG AAGTTAACTT GTCTGATTTG GAAAAAATTC GTCTTGCTAT    11100

TCGAGATTTA TTACAGTTTT TGGATAAAAC AGACCGTAAA CCCTACTATG TTAACTTTGA    11160

AGATCGTATA CTCTCCACTG TTCACGAGAC CACAGCATTT TTGCAGGTCA ACGATCTTCG    11220

GTCTTACAAT GAAAAAGTTG AGCATTATTT GAAAACTCAT CTGGATGAGG AGTCCATTTC    11280

TAAGCTATAC CATAATAAAA AGTTGACATC TGATGATATG CTTGCACTTG AAAAATTGCT    11340

TTGGGAAAAA TTAGGTAGTA AAGCAGACTA CCAAAGTCAT TATGAAAATA AGGCAATTCC    11400

GAGATTGGTT CGTGAGATTA TTGGCTTAGA TAGAGAGTCT GCCAATCGTA TTTTTTCTAA    11460

ATTTTTGTCG GATGAGAATC TTAATGCCAG GCAGATTTCA TTTGTAAAAT TGATTGTAGA    11520

CTACATTGTA GAAAATGGTT TTTTAGAGAC GAAAGTGTTA ACGCAAGAGC CGTTTAAATC    11580

TTATGGTTCT GTTCAACTAC TCTTCCAACA CCAACTACCA GTACTTCGTA ATATTGTTCA    11640

AATCATTGAA CTTATCAATA ATCGAGCTGG AGAAGCGGCT TAAATTCTAA AGTGATTGCC    11700

ATGCTGAGAC TCATTTAAAA TTAAAAAGAG TAGAAATTTA TGCTATATAT GAGAAGTTTT    11760
```

462

```
ATTAGGAAGA ATGTCATCGT TTTCCTAGAA TACAGTATCA GTTGTTAAGT GGTTGATAAA    11820

TTTCAAAGTA GATACTTGTA CCACGATGTT TGTTGATCGA GTTATTAACA AAAGAGCTAC    11880

TTTGATTTTA AAGAAATAGA AAACAAAAAG CCGAGCAAGA ATTCAATTGC AGGAGAAAAT    11940

GAAATAATAC TCAATGAAAA TCAAAGAGCA AACTAGGAAA CTAGCTGCAG GCTGCTCAAA    12000

ACACTGTTTT GAGGTTGCAG ATGGAAGCTG ACGCGGATTG AAGAGATTTT CGAAGAGTAT    12060

AAATCTTCCT AGGATAAAGC AAAACGCATA GTATCAAGGG TTTTCAACAC TTGATACTAT    12120

GCGTTTTCTG ATGTTAAAGA CTTTCTACCA GGTTTTTTAA AAGCATAATT GTTAGTTGTA    12180

GTCATTTATT ATTCTTCAAA GAAAAATGGT GGGGCGAATT TTTTCAGTTC TTCAAAGCAC    12240

TTTTGAGCAG TATCTGCATC TTCACAGATG ATAAGACAGA CATCATTACC ACAAAGGGTA    12300

GCGATAGCGT CAGGGAAGCT CAAAGTATCA ATGATAGAAC CAAAGGATTG AGCCAGTCCA    12360

GGAAGGGTTT TTAGTAGGAC TTGGTGTTGA ACTGGGCGCA TCCAGACAAG GGCGTCTTCC    12420

ATGTAGAGTT CGAGACGTTT TTCCCATTTT GAGATGGAAC CATTGTTAAG AACATAATAA    12480

GCGCTATCTT CTTCGCGGAC TTTTGATAGG TTCATATTTT TGATGTCGCG TGAGAGGGTT    12540

GCCTGGGTTA CTTGAATGTC GTTCTCAGCA AGAAGGGCTT GCAACTCAGC CTGTGTATGA    12600

ATCTTGTTTT TTGTGATAAG AGCGCGTATA AGTTGGTGGC GGTGTTCTGA TTTATTCATA    12660

ATAATGTAAC TCCTTTTAGC AAGGTAAGGT AAGCATGGAC TGAGCGAGGT CGACAGTCAA    12720

GTGGTAGTCT GTATTGTCAC GGATGGTGAT TTCAAAGTCA GTAGTATAGA GGACTAAACG    12780

GAGAGTGTCT CCTTCTTTTA GCTTGTAAAT AGTTGGCTGC AGTTCAAATT GAACGTCCAT    12840

CCATTCATCT GCAGTAATAT CCTCTACTAA CAGTAAATCA TTTCTATTTT GTAAATTAAG    12900

GTAACCTTTT GTCACGACTC GTTGTGCCTC TGGTCTAAAT GGCAATTCAC AGAGATTTTC    12960

CAACATGTGA TAGCGACCGT TGTCAATGGT TCTAGCACTT AAAATAGCTG GATAAGGTTG    13020

TAGGTATTTC TTTTGCCCAA ATTCTAGCAG TTGGGCAGAT AAGAGCCCCT TGTTTGTACT    13080

GGATTTGATA CGAAGATTGA GCTGAGCGCG ACCGTTTAGG TGGAGATCTT TAGTCACAGG    13140

AAGGTTAATA GTAATCTGAT TGGCTTTCCC TTGATAGAGC TCTGTATTGA AGGTTTGGTA    13200

TGTCTTACCA TAGCGCTCAA AATCCTTATC TGGGTACTGG TTTTGAATAG CTTGCTCTTC    13260

TTGACCAAGT GAGAAGGTTT CACAGTTTTC TTGCCCACCG AAGTTATCAA GTGATAACCA    13320

AGTCTGTGGA GCTGTATTGT CCTGCCAGAT AACAGTAGGA AGTTGAAAGT CTGTTTCCTG    13380

TCCTAGTAAT TTCTTGGTCA ATAAGGCATT TATGGACTCA CGGAAGTCAA TTGATTGCCA    13440

ATTGTTCATG TAAACATGGG CACCATTATG GAAAAAGAGA TGCTTGTGTA TATGAGTAGG    13500

AAGAGCATGG AACATCTGGT AAACATGAAG TGGTTTGACA TTCCAATCCT GAGAACCATG    13560
```

463

```
AGTAAAGACA ACCTCTGCCT TTACTTTATG GGCATTGAGC AGATAATTGC GGTCATGCCA    13620

AAACTGATTG TAGTCCCCAG TTTTTCGGTC TAGCTGAGCT TTCACTTTTT CTAAGTCAGC    13680

TTGGTGAGCT TCATTGCCAC GGATATAGTC GCCAGCTAAG AGATTACGAG AATAGGTTAA    13740

CTCAGCAAGG GAGTCAAAGT CCTCACCTGG ATAACCACCT GGGCTAGTCA CCAGACCGTT    13800

TTCACGGTAG TAGTTGTACC ATGATGAAAT TCCTGCCTCG GCAATGATAA CTTCTAAACC    13860

ATCGACTCCT GTAGTCGCAA GACCATTGGA CATGGTACCT AGATAGGAAA GTCCTGTTGT    13920

AGCAACTTTT CCGTTTGACC AATCAGCCTT GACTTGACGC TGGCGCGTGT GATCAGTAAA    13980

GGCACGGCAA CGACCGTTAA GCCAATCGAT GACATTTTTA TAAGCCTCGA TTTGCTGGTA    .14040

GTCTCCATTA GTCATGAAAC CTGTCGAGTC TTTGGTACCA ACACCTGAGA CATAGAGATT    14100

GGCAAAGCCT CTCGGAAGGA AGTAGTCGTT TAGTGTATAG CTAGAGTTGA TGTGAGTTAG    14160

CTTTTCCTCA GCCTCTGCTA TAAGCTCAGC TTTACCTTGG GGTTGGACGA GATTTAGTTG    14220

AGGTTTCTCT AGCTCAATCT TGTGAGGAAG CTTAACCTCA AGCTCGCCCT CCATCTTGTA    14280

GAGAGCCTTG TCACTAGCCT TGTCATTGGT TCCCTGATGA TAAGGGCTGG CTGTCATGAT    14340

GGCAGGGATT TTTCCATCAA AACGAGGGCG AATAATGCTA ACCTTTACTA GGTCTGATAG    14400

CCCTTTTTGG TCAGTATCGA CACGAGACTC AACGTAAACG ACTTCACGAA TGACATCCTG    14460

GTTAGAAAAA GTAGCCAAAC TCTTGCCGTT AAAGTAGTGG TAGTCATTAT CCTCCGGAAT    14520

AAGACCATCA CTAACAAGTT GGTCGATAAG AGTATTTCCT TTTTTGGTGC GAGTATTGAG    14580

TAACTGATAG AGATTTTCAA TCAAGTCACC ATATATAATG GGAAATCCAG TTTCTTTACG    14640

AAAAACGTCA CTATCTTCGA AGTCAACCAA ATAAGAAAAG CCTAAAAGTT GAAAAGCAAC    14700

AGTATAAAAA ATATCTGCTG TCAGTTCATC TTCTGATTGA AAAAATGTCA GCAGGTCTGT    14760

TTTTTTATCA GCTGCTAGGA TAGAAAGTGG GTAGTTGGTG TCTTGATAAG TGAAAAAGAA    14820

ACGACGTAAA AAGGTTTCAA GTGAGTCTTT GTGATTGGCT GTATTTTGTA AATCAAAGCC    14880

ACATTTTTTT AGTTCAGATA AGACATTTTC TTTTGGAAAA TTGATATAAC TATATTGATT    14940

AAAACGCATA GAACCTCCAT ATAGAATGAC AGTTAAGGTT ATTATATCAA AAAAAAAGCA    15000

GAAAGGGAAT TGTTAACTTC AAAAGGAAAT AATCCAATAA AAATGAATAA AGTACTAAAT    15060

TCAATATAGA GAACAGAGTA ACAATAAGAA TAAATAGATA GGGTATAAAA GTTCTAGGAG    15120

ATTTATATTA TATGCTTTCT ATTTTTATAT ACAATATAGT ATAAATATAA AAATGATGAC    15180

AAAAATACAA ATGAATAGAA AATAAATTAG TAAGCTGATG AAATTTTTCT CAAGAGAAGC    15240

CATTTATAGG TGAAAATGGT ATAATATAGT GAGAAGGATA GAGGAGAAGT GTAAATTGAT    15300
```

464

```
CGCACAACTA GATACAAAAA CAGTCTATAG TTTTATGGAA AGCGTCATTT CGATCGAAAA      15360

GTATGTGAGA GCAGCTAAAG AATACGGCTA CACTCATTTG GCTATGATGG ATATTGACAA      15420

TCTTTATGGC GCTTTCGACT TTCTAGAGAT TACAAAAAAA TACGGCATTC ATCCTTTGCT      15480

AGGGCTTGAA ATGACAGTGT TTGTAGATGA TCAGGGAGTG AATTTGCGCT TTTTAGCTCT      15540

ATCTAGTGTG GGCTATCAGC AGTTGATGAA GCTTTCGACA GCCAAGATGC AGGGGGAGAA      15600

AACTTGGTCA GTCCTGTCCC AGTACCTGGA GGATATCGCG GTCATTGTGC CTTATTTTGA      15660

TAGAGTTGAG TCGTTAGAAC TAGGCTGTGA TTACTATATA GGGGTTTATC CAGAAACACT      15720

AGCAAGCGAA TTTCATCATC CTATCTTACC TCTTTATCGG GTCAACGCTT TTGAAAGCAG      15780

GGATAGAGAA GTTCTTCAAG TTTTAACAGC GATTAAAGAA AATCTACCGC TCAGAGAAGT      15840

TCCCTTGCGT TCGAGACAAG ATGTCTTTAT ATCAGCAAGT TCTTTAGAGA AACTATTCCA      15900

AGAGCGTTTT CCGCAAGCTT TGGACAATTT AGAAAAGCTT ATTTCAGGCA TTTCTTACGA      15960

CTTGGATACT AGTCTGAAAC TGCCTCGTTT TAATCCAGCT AGACCAGCAG TAGAGGAGTT      16020

GAGAGAGCGT GCTGAACTGG GGCTTGTTCA GAAGGGGTTG ACTAGTAAAG AATATCAAGA      16080

TAGACTAGAC CAAGAATTGT CTGTTATTCA TGATATGGGC TTTGATGATT ATTTCTTGGT      16140

TGTTTGGGAT TTGTTGCGTT TTGGACAATC GAATGGCTAT TATATGGGAA TGGGAAGGGG      16200

TTCTGCAGTA GGCAGTTTGG TTTCTTATGC CTTAGACATC ACGGGGATTG ACCCAGTAGA      16260

GAAAAATCTG ATTTTTGAAC GCTTTCTTAA TCGTGAACGC TATACCATGC CTGATATTGA      16320

TATTGATATC CCAGATATTT ATCGTCCAGA TTTTATCAGA TATGTTGGTA ATAAATATGG      16380

TAGTAAACAT GCGGCACAAA TCGTTACTTT TTCAACCTTT GGAGCCAAGC AAGCTCTTCG      16440

AGATGTCTTG AAACGCTTTG GTGTGCCAGA GTATGAATTA TCTGCAATTA CTAAGAAAAT      16500

CAGTTTTCGT GACAATCTTA AGTCGGCCTA TGAGGGAAAT CTCCAGTTTC GTCAGCAAAT      16560

CAATAGTAAG TTAGAATACC AAAAAGCTTT TGAGATTGCT TGCAAGATAG AGGGCTATCC      16620

AAGGCAAACC TCTGTCCATG CGGCTGGTGT TGTAATTAGT GACCAAGATT TAACCAACTA      16680

CATTCCTCTA AAGTATGGTG ATGAAATTCC ACTGACTCAG TATGATGCTC ATGGAGTTGA      16740

GGCTAGCGGA CTTTTGAAGA TGGACTTTCT GGGACTACGA AATTTGACCT TTGTCCAGAA      16800

GATGCAAGAG TTGCTTGCTG AAACAGAAGG TATTCATCTG AAAATTGAAG AAATCGATTT      16860

AGAAGACAAA GAAACGTTAG CTTTATTTGC CTCTGGTAAT ACAAAAGGTA TCTTTCAATT      16920

TGAGCAACCA GGTGCCATTC GTCTGCTTAA GCGTGTGCAA CCAGTCTGTT TTGAAGATGT      16980

CGTCGCGACT ACTTCTCTAA ATCGACCGGG TGCTAGTGAC TATATCAATA ATTTTGTGGC      17040

AAGAAAGCAT GGGCAGGAAG AAGTGACTGT TCTGGATCCA GTACTGGAGG ATATTTTGGC      17100
```

465

```
TCCAACCTAC GGCATAATGC TCTATCAGGA GCAGGTTATG CAGGTTGCCC AGCGACTTGC   17160

CGGATTTAGT CTTGGGAAAG CCGATATTTT GCGTCGGGCT ATGGGGAAAA AGGATGCCTC   17220

TGCCATGCAT GAGATGAGGG CTTCCTTTAT TCAAGGTTCA TTAGAAGCTG GTCATACTGT   17280

GGAAAAAGCA GAGCAGGTCT TTGATGTTAT GGAGAAGTTT GCAGGTTATG GTTTTAACAG   17340

GTCACACGCC TATGCCTACT CAGCCTTGGC CTTCCAGTTG GCTTATTTCA AAACGCATTA   17400

TCCAGCCATT TTTTATCAGG TCATGTTAAA TTCTTCCAAC AGTGATTACT TAATAGATGC   17460

ACTTGAAGCA GGTTTTGAAG TAGCCTCTCT ATCCATCAAC ACCATTCCCT ATCACGATAA   17520

AATTGCCAAC AAGGCCATCT ATCTAGGTTT GAAATCCATT AAAGGAGTCA GTAATGATTT   17580

AGCTCTCTGG ATTATTGAAA ATAGACCTTA TTCTAACATT GAAGATTTTA TAGCTAAATT   17640

ACCTGAGAAT TATCTGAAAC TTCCTCTGCT AGAACCTTTG GTAAAAGTTG GTCTTTTCGA   17700

TTCATTTGAA AAAAATCGTC AAAAAGTATT TAATAACTTA GCTAATCTAT TTGAATTTGT   17760

GAAAGAGTTG GGAAGTTTGT TTGGAGATGC TATTTATAGT TGGCAGGAAT CGGAAGATTG   17820

GACGGAACAA GAAAAATTTT ATATGGAACA AGAGCTTTTA GGGATAGGTG TCAGCAAACA   17880

TCCACTACAA GCTATTGCAA GTAAGGCTAT TTACCCGATT ACCCCAATCG GAAATTTGTC   17940

AGAAAATAGC TATGCTATTA TCTTGGTTGA AGTTCAGAAA ATAAAAGTGA TTCGTACCAA   18000

AAAGGGTGAA AATATGGCCT TCTTACAGGC AGATGATAGT AAGAAAAAAT TGGATGTCAC   18060

TCTCTTTTCA GACTTATATC GTCAGGTTGG ACAGGAAATA AAAGAGGGAG CCTTCTACTA   18120

TGTAAAAGGA AAAATACAAT CACGTGATGG CCGTCTGCAA ATGATTGCAC AAGAAATAAG   18180

AGAAGCAGTT GCTGAACGCT TTTGGATACA GGTGAAAAAT CATGAATCGG ATCAAGAAAT   18240

TTCACGCATT TTAGAACAAT TTAAAGGCCC AATCCCAGTC ATCATCCGGT ATGAAGAGGA   18300

ACAGAAAACC ATCGTTTCTC CCCATCATTT TGTAGCTAAA TCCAATGAAT TAGAGGAGAA   18360

ATTGAATGAA ATCGTTATGA AAACGATTTA TCGCTAAAAA TACGGAAAAT AGAAGAATTT   18420

TCAACGTAAA TGTGGTATAA TCAGTAAGAA TGTTAAAAGA AAAAGGAGCA TAACCAATAT   18480

GAAACGTATT GCTGTTTTGA CTAGTGGTGG AGACGCCCCT GGTATGAACG CTGCCATCCG   18540

TGCAGTTGTT CGTCAAGCAA TTTCAGAAGG AATGGAAGTT TTTGGTATCT ATGACGGATA   18600

TGCTGGTATG GTTGCCGGTG AAATTCATCC CCTAGATGCA GCTTCAGTAG GGACATCAT    18660

TTCTCGTGGT GGTACTTTCC TTCACTCAGC TCGTTACCCA GAGTTCGCTC AACTTGAAGG   18720

GCAACTTAAA GGGATTGAGC AATTGAAAAA ACACGGAATT GAAGGTGTAG TTGTTATCGG   18780

TGGTGACGGA TCTTACCACG GCGCTATGCG TTTGACTGAA CATGGCTTCC CAGCTATTGG   18840
```

466

```
TCTTCCAGGT ACAATCGATA ACGATATCGT TGGTACTGAC TTTACAATCG GTTTTGACAC    18900

AGCGGTTACT ACTGCCATGG ACGCTATCGA TAAGATTCGT GATACATCAT CAAGTCACCG    18960

TCGTACTTTT GTAATCGAAG TTATGGGACG TAACGCTGGT GATATCGCTC TTTGGGCTGG    19020

TATTGCAACT GGTGCTGATG AAATCATCAT CCCTGAAGCA GGCTTCAAGA TGGAAGATAT    19080

CGTAGCAAGC ATCAAAGCTG GTTATGAATG TGGTAAAAAA CACAATATTA TCGTCTTAGC    19140

TGAAGGTGTG ATGTCAGCGG CTGAATTTGG TCAAAAACTT AAAGAAGCTG GAGATACAAG    19200

CGACCTTCGT GTAACAGAAC TTGGACATAT TCAACGTGGT GGTTCTCCAA CTGCGCGTGA    19260

CCGTGTTTTG GCGTCACGTA TGGGTGCACA TGCTGTTAAA CTTCTTAAAG AAGGTATCGG    19320

TGGTGTTGCG GTTGGTATTC GTAACGAAAA AATGGTTGAA AATCCAATTC TTGGTACTGC    19380

AGAAGAAGGG GCATTGTTTA GCCTTACTGC AGAAGGTAAG ATTGTGGTTA ACAACCCAGC    19440

TACAAA                                                              19446
```

(2) INFORMATION FOR SEQ ID NO: 52:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 16593 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

```
TCGTAAATAT GCTCTGTTTT TGGATTTTGT TTCTTAATCT GTTTGGCAAG TGCCTTCATC       60

ATAGAAATAG GACCACACAT ATAGACGGTT GCATGTTCGG GCACTTCTTT TTGTTCAAAA      120

TTAAGATAGC CGTCTTTCGT ACTGTCGATT AGATGGAGTT CAAAATTAGG ATTTTTCTGA      180

GCATAGTTAC GGAGTAAATC TAGGTAGACT GCATTTTCAT CTCCACGGAA GCTATAGTAG      240

AAGTGAACCT GTTTATCTAA AATAGGATGT TCACGGATGT AAGAGATGAA GGGGGTGATC      300

CCAATACCTC CAGCAATCCA AACCTGATTT TCTCGTCCTT CTTCTATGAT CATGTGTCCG      360

TAAGCTCTGT CTAGGGTTAC TTTGCTGCCG GCTTGAAGAT TATCATAGAT ATTCTTGGTA      420

TGGTCGCCTG AAGTTTTAAC AGTAAAGTAA AGAGTTTGAC CATGACCTCC TGAGATAGAA      480

AAGGGATGCG GAGCACTTTC AAAGCCTTCT TGGAAAATCT TTAGAAAGGC AAATTGTCCT      540

GATTGATAGT TGAAAGGTCT GCTAAGATGG ATTTGAATTT CTCTAGTATC GTGATTTAAG      600

CGTTTGAGAT GGGTAATTTT CCCTAGATAG GGGAAGGAAA TCTTTTGATA TAGAAAAATG      660

ATATAAAAAC CAGCTAGTAA GCCTAAAAGG GCATAGCTAC CAACAAGAAA ACTTAGAAGA      720

TTAAATGTAA GGAGACGATT GCCCATTATC ATGTAGATGT GAAAGAGTCC TAAAATATAG      780
```

467

```
GCTAGGTAAA CCAGGCGGTG AATCCATCGC CAAGCTTCGT ATTGGATGTA TTTGCCTAAA        840

TAGGCGACAA GGATGATGCT GGCAAAGATA TAGATGGCAA GATTGCCAAA CTGAGCAGCT        900

AAGCGAGAGC CCCACAAACC GCCCATACTA AAGTTATGAA AGATTAGTAG GATGATTGAG        960

AGAAAGGCTG TGAATTTGTG GACGGTGTAG ACCTTCTCCA AACTGTGAAA CCAGCTTTCT       1020

AGTAGTGGGA GACGAGTGGC TAGGATAAAA GTCAGAGATA GGCTTGTTAA AGCTAGTCCT       1080

GGAATCATGA ATTGGGGAGA AGTGTTCATC CAAGTCAAAA GAGTCAAGAT AAAACTAGCT       1140

ATGATAAAGA GTAGTCCTTT GACTGATTTC ATAGAAAATT CCATTTCATT TAGATTTCGA       1200

TTTGTTGTAA ATAAATTTGT TACATTTTAT CATAGAAAAT GTATGGTGTC AAATTGAGGT       1260

CTATAAATAT CTACTCTCAT CAAAAAACTC TCCAATTGAA CTGGAGAGTG GCTGTTTATA       1320

CTCAATGAAA ATCAAAGAGC AAACTAGGAA GCTAGCCGCA AGTTGCTCAA AACACTGTTT       1380

TGAGGTTGCA GATAGAGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTGT TATTCTGCAG       1440

CTTGTTGCCA ACGTTTGGCT AGCATATGAG ACAGGCTAGA AATTGCTAGG TTAAAGCTGA       1500

AGTAGATGAG GGCAATCAGG ATGTAAAGAC TGAAGACCTG CTCTGGTTCG AAATAACGGC       1560

CCATGAGAAT TTGGCTGGCT CCAAAGAGTT CTTGTAGGGC GATAACAGAG TAGAGGAGAC       1620

TGGTATCCTT AATCACGGTA ACAAACTGAG AAATGATGGC TGGTAGCATT TTGCGGATGG       1680

CTTGTGGGAG AATGATGTAG TAGAGGATTT GGGCTGAGGT GAAGCCTTGT GACATTCCTG       1740

CTTCGTACTG TCCCTTGTCT ACGGCATTGA GACCGCCTCG AATAATCTCA GCCAAGGCTG       1800

CTGATGTAAA GAGAGTAAAG GCTGTAATAC CTGCTGGTGT GGATTTCATT TTGAACACCA       1860

AAAAGATAGT AAAAATCCAG AGAAGGTTGG GAACGTTGCG CACAAACTCG ATATAAATAC       1920

TGGAAATAAT GCGTAAGACA GGATTTTTGC CATTTCTCGT GACAGCTAGC ACCGTACCGA       1980

TGATAGTAGA GAGGATGATG GCAATCAGAG AAATATAGAG GGTCAAGCCA AATCCTTTAA       2040

AGATAAAGAC TAGGTTATCT GGGGTTAAAA CTTCTAAAAT AGATTCCATA GTAACCTCCT       2100

AAAGTGAATA GGCTTTTTTG TTGGCTTGCT CCATCTTGCG ACCAAACTGG GCAACAGGGA       2160

AGCATAGAGC AAAGTAGAGA AGAGCAGCAC CTAAAAAGGC TGGTATATAG TTTCCGTTGA       2220

GAGCCGACCA AGACTTAGTC ACAAACATCA AGTCTACTCC AGAGATGATA GCTACAGTAG       2280

AGGTGTTCTT GATGAGGTTA ACAATTTGGT TGGTCAATGG AGGGAGAATG ATGCGGAAGG       2340

CCTGAGGCAA GATAATCAAG CGCATGGCAC TGATATAGGT AAAACCTTGC GACAAGGCGG       2400

CCTCCATCTG ACCACTAGGA ATAGACTGAA TCCCTGAACG AATAACCTCA GCGATATAAG       2460

CGCCGTGATA GAGTCCCACG CAGAGAACGG CTGTCCAATA AATTGGAATC ATGATGATAT       2520
```

468

```
GGTCACTGAT AAGAGGTAGG CCATAAAAAA CAATAACAAA CTGCACCAAG AGGGGAGTAT      2580

TTTGGTAAAA TTCAACAAAG ATGCGAGCTA AAATGCGTAA AATTGGACGT TTACTGGTTG      2640

ACATGGCACC AAAGAAGATG CCCAAAACCA TAGCGAGGAT AAAGGAACCA ACCGCTAGGG      2700

CAAGGGTGAA GAGGAAACCA TTGAAAAATT GTCCAAAATC CTGAAAATAG GCTGTCCAAG      2760

ATGATAAATC TGTCATGGGG TGTCCTCCTT AATCTGCAGT ATGGCTAGAT GGTTTGAGCT      2820

TGTAACGGTC ATAAAGTTTC TGCAAACTAC CATCCTTGCT CCATTTAGTA ACCAAGTTAT      2880

CAAGATAGTC GTTGAGCTCT GTATTTGATT TCTTGGTAAC AATACCGTAG TCAGATGGCT      2940

TGAAACTATC ATCTAGTAGT GCTGTCCGTT TACTAGTGTA GCCAGATAGA ATAGAGCGGT      3000

CAACGGAAAA GGTATCGATA CGATGAGCGT GCAGGGAAGT AATCAATTCT GGGTAGGAAC      3060

CAAGTTCGAC GAATTTAAAC TTCAGACCTT TCTTTTTACC CAGTTCAGTA ATCAGGCGTT      3120

GGGTGATAGA ACCTTGGGCG ACTCCGATGG TTTTGCCGTT TAGGTCCTCA ATCTTTTTGA      3180

TTTTGGCAGA TTTATTGACC AAAAATCCAG AAGCGTCTGT GTAGTAGGGA CTGGTAAAGT      3240

TGTAGAGTTT TTTGCGTTCG TCCGTGATGG TAAAGGTCGC GATATCCATA TCGACCTGTT      3300

CATTGTCTAG AAGGGGGCCG CGGGTTTGTG CTGTAACCGG CACATAGCGA ATCTTGACCT      3360

TGAGTTCATC AGCTACCATC TTGGCCAAGT CGGTTTCGAT ACCAGAATAA GTACCGGTCT      3420

TGGGATCTTT GTAACCAAAA TTGGGAACGT CTTGTTTGAC ACCGACAACC AGTTCGCCTC      3480

TTTTTTGAAT GTCTGCGATA CTTGTATCAG CCTGGACTGG TTTGGCAGCA GCAAGCCCCA      3540

AAAGGCTAAT CAATAATGCT GATAAAAAGA ATTTTTTTTC ATAGGCGCCT CCTTATTTGA      3600

CTTTGTCACT TTCGTGGTTG ATAATTTTGC TGAGGAATTG TTGGGCACGA GGTTCGCTTG      3660

GATTGTCAAA AAAGTTATCG ACATCTGTCG TATCTACTAA AACTTCTCCG TCGGCCATAA      3720

AGATAATGCG GTCCGCAACC TCTCGAGCAA AGCCCATTTC GTGGGTAACG ATGATCATGT      3780

TCATCCCATC ATGCGCCAGT TTCTGCATAA CTGCTAGAAC ATCTCCGATA GTCTCAGGAT      3840

CAAGAGCAGA TGTTGGTTCA TCAAAGAGGA GGAGTTCCGG ATGCATAGCA AGACCACGAG      3900

CGATGGCGAT CCGCTGTTTT TGTCCACCAG ATAGCATGGC GGGATAGGAA TCTTTCTTGT      3960

CCCACATATT TACAAATTCC AGATATTTTT GGGCGGTTTT TTCAGCTTCT TTTTTATCAA      4020

TTCCTAGAAC TTCAATGGGT GCAAGCGTTA CGTTTTCTAA CACAGCTTTG TGTGGATAAA      4080

GGTTAAAATG TTGAAAAACC ATGCCGACTT CCTTGCGAAG AGGTACCAAA TCTTTCTGGC      4140

TGGCACCAGC AACTTGGTGC CCATTGACTA GGAGACTTCC TTTGTCAACA GTCTCTAAAC      4200

CATTGATCGT ACGGATAAGA GTGGACTTCC CAGAGCCAGA AGGTCCAAGC AGGACAACAA      4260

CTTGTCCTTT TTCAAAACGG AGATTGATGT TGCGGAATGC GTGGTAGTCT CCGTAATATT      4320
```

469

```
TTTCGACGTT TTTAAATTCT ACTAAAGCCA TGAGAGATCT CTATTGTGTT ATATTTTATA   4380

ACACGGTTCT ACAATAAAAG AATGTTCTTG TCAAATCATA TCTGAAAAAA TTCACTATAG   4440

TGAAATAAGA ACAGGAAAAA TCGATCGGGA CAGTCAAATC GATTTCTAAC AATATTTTAG   4500

AAGTAGAGGT GTACTATTCT AGTTTCAATA TACTATAAAA TGTTATAAAA AAGCAATCTG   4560

GATAGAGAAA ACGTCTAAAT CATGTTATAA TGAAGCAATA GAATTCTTAG AAAGAGTGGA   4620

TGTCTTTTTG ATAACACCTA CTTATGAATG GCAGTTTGCC CTGCAGGTAG AAGATGCGGA   4680

TTTTACAAAG ATAGCCAAGA AGGCTGGACT GGGTCCTGAG GTGGCTCGGT TATTGTTTGA   4740

GAGAGGGATT CAGAACCAAG AAAGTCTGAA GAAGTTTTTA GAACCTTCCT TGGAGGACTT   4800

ACATGATGCT TATCTGCTCC ATGATATGGA CAAGGCAGTG GAGCGGATTC GTCAGGCTAT   4860

TGAAGAAGGG GAAAATATTC TTGTTTATGG AGACTATGAT GCGGATGGCA TGACTTCGGC   4920

TTCTATTGTG AAGGAAAGTT TGGAACAACT TGGTGCTGAG TGCCGAGTTT ACCTGCCAAA   4980

TCGTTTTACC GATGGCTATG GCCCTAATGC TAGTGTTTAT AAATACTTTA TCGAGCAAGA   5040

AGGGATTTCC TTGATTGTGA CGGTGGACAA TGGGGTTGCT GGTCATGAGG CTATTGCATT   5100

GGCTCAGTCT ATGGGAGTAG ATGTCATTGT GACAGACCAT CATTCCATGC CTGAAACCCT   5160

GCCAGATGCT TATGCTATTG TCCATCCTGA ACATCCAGAT GCGGATTATC CTTTTAAATA   5220

TTTGGCTGGT TGTGGAGTTG CTTTCAAGTT GGCTTGTGCC CTGTTAGAAG AAGTGCAAGT   5280

GGAATTGCTT GATTTGGTCG CTATTGGAAC TATTGCAGAT ATGGTGAGTC TGACGGATGA   5340

AAATCGTATC TTAGTTCAAT ATGGTCTGGA AATGTTGGGT CATACCCAGC GCATTGGTCT   5400

GCAAGAAATG CTGGACATGG CTGGGATTGC TGCCAACGAA GTAACAGAAG AAACGGTTGG   5460

TTTCCAGATT GCTCCTCGTT TGAATGCCTT GGGTCGCTTG GATGATCCCA ATCCTGCCAT   5520

TGATTGTTG ACTGGATTTG ATGATGAGGA AGCGCATGAG ATTGCCCTTA TGATTCACCA   5580

GAAAAACGAA GAGCGCAAGG AAATCGTTCA GTCTATCTAT GAAGAAGCCA AGACCATCGT   5640

GGATCCTGAG AAGAAGGTTC AGGTCTTGGC CAAGGAAGGC TGGAATCCTG GGGTTCTAGG   5700

AATCGTGGCT GGTCGTTTAT TGGAAGAATT GGGACAGACA GTCATTGTTC TTAATATAGA   5760

AGACGGTCGT GCCAAGGGCA GTGCTCGTAG TGTGGAAGCG GTCGATATTT TTGAAGCTCT   5820

GGATCCCCAT CGAGACCTCT TCATCGCCTT TGGAGGTCAT GCAGGTGCAG CGGGTATGAC   5880

GCTGGAAGTT GAGCAACTCT CAGATTTATC TCAGGTTTTG GAAGATTATG TTCGTGAAAA   5940

AGGTGCAGAT GCTGGTGGCA AGAATAAGTT AAACCTAGAT GAAGAGTTGG ATTTGGAGGC   6000

ACTTAGCTTG GAAACGGTCA AAAGTTTTGA ACGTTTAGCT CCTTTTGGAA TGGATAATCA   6060
```

470

```
GAAACCTATT TTTTATATCA AGAATTTTCA GGTCGAAAGT GCTCGTACTA TGGGGGCAGG      6120

TAATGCCCAT CTAAAGCTGA AAATTTCCAA GGGTGAGGCG AGTTTTGAAG TGGTAGCCTT      6180

TGGTCAAGGC AGATGGGCGA CAGAGTTTTC TCAAACCAAG AATCTAGAGT TAGCGGTTAA      6240

ATTGTCTGTC AACCAATGGA ATGGCCAAAC TGCCCTCCAG TTGATGATGG TGGATGCGCG      6300

AGTGGAAGGT GTTCAACTTT TTAACATTCG TGGAAAAAAT GCAGTCTTGC CAGAAGGTGT      6360

TCCAGTCTTG GATTTTCCTG GAGAACTGCC AAATCTTGCG GCTAGTGAAG CTGTTGTCGT      6420

AAAAAACATT CCAGAGGATA TTACTCAGCT GAAGACCATT TTTCAGGAAC AGCATTTCTC      6480

TGCTGTCTAT TTCAAAAATG ATATTGACAA GGCTTATTAT CTGACAGGTT ATGGGACTAG      6540

AGATCAGTTT GCCAAATTGT ACAAGACTAT TTACCAGTTC CCAGAGTTTG ATATTCGCTA      6600

CAAGCTGAAA GATTTGGCTG CATATCTTAA TATTCAACAA ATCTTGCTGG TCAAGATGAT      6660

TCAAGTATTT GAAGAACTAG GCTTTGTGAC GATAAAAGAT GGTGTGATGA CAGTCAATAA      6720

AGAGGCGCCA AAGCGGGAGA TAGGAGAAAG TCAAATTTAC CAAAATCTCA AACAAACCGT      6780

TAAAGACCAA GAAATGATGG CGCTGGGTAC GGTGCAAGAA ATTTATGATT TTTTGATGGA      6840

AAAAGAGTAG AAGTTAGGAA AGAGTTGGGA AATCAACTCT TTTTTGAAAA CAGACCTTCA      6900

TTTTGAAAAT CATCAAAAAA ATGGTATAAT GGTAGGAAAA GATTCGGCTG AAAGTATCAG      6960

AACTTTTAGA ATAAGAGGGT AGAATTGCCC TATAATCAAG ATAAACTAAG ATTTTGGAGG      7020

AAAAATGAGT AATATCAGTT TAACAACACT TGGTGGTGTG CGTGAGAATG GAAAAAATAT      7080

GTACATTGCT GAAATTGGAG AGTCCATTTT TGTTTTGAAT GTAGGGTTAA AATATCCTGA      7140

AAATGAACAA TTAGGGGTCG ATGTGGTGAT TCCAAACATG GATTACCTTT TTGAAAATAG      7200

CGACCGTATT GCTGGGGTTT TCTTGACCCA CGGGCATGCG GATGCCATTG GTGCTCTACC      7260

GTATCTCTTG GCAGAGGCTA AAGTTCCTGT ATTTGGGTCT GAGTTGACCA TTGAGTTGGC      7320

AAAGCTCTTT GTCAAAGGAA ATGATGCCGT TAAGAAATTT AATGATTTCC ATGTCATTGA      7380

TGAGAATACG GAGATTGATT TTGGTGGGAC AGTGGTTTCC TTCTTCCCTA CGACTTACTC      7440

CGTTCCAGAG AGTCTGGGAA TTGTCTTGAA GACATCGGAA GGAAGCATCG TTTATACAGG      7500

TGACTTCAAA TTTGACCAAA CGGCTAGTGA ATCTTATGCA ACTGATTTTG CTCGTTTGGC      7560

AGAGATTGGT CGTGACGGCG TCCTGGCTCT CCTCAGTGAT TCGGCCAATG CAGACAGCAA      7620

TATTCAGGTG GCTAGTGAAA GTGAAGTTAG GGATGAAATT ACCCAAACTA TTGCTGACTG      7680

GGAAGGTCGT ATCATCGTTG CAGCTGTTTC CAGTAATCTT TCTCGTATTC AGCAGATTTT      7740

TGACGCTGCG GATAAAACAG GTCGACGTAT CGTCTTGACA GGATTTGATA TTGAAAATAT      7800

CGTCCGCACA GCGATTCGTC TTAAGAAGTT GTCTTTAGCC AACGAAATTC TTTTGATTAA      7860
```

471

```
GCCTAAAGAT ATGTCTCGCT TTGAAGACCA TGAGTTGATT ATTCTTGAGA CAGGTCGTAT          7920

GGGTGAGCCT ATCAATGGAC TTCGTAAGAT GTCGATTGGT CGCCATCGTT ATGTAGAAAT          7980

CAAGGATGGG GACCTAGTCT ATATTGCTAC GGCTCCGTCT ATTGCTAAAG AAGCCTTTGT          8040

TGCGCGTGTG GAAAATATGA TTTATCAGGC AGGTGGGGTT GTCAAATTGA TTACCCAAAG          8100

TTTACATGTA TCAGGGCACG GAAATGTGCG TGATTTGCAG CTGATGATCA ATCTTTTGCA          8160

ACCTAAGTAC CTCTTCCCTG TCCAAGGGGA GTATCGTGAG TTGGATGCTC ACGCTAAGGC          8220

TGCCATGGCA GTTGGGATGT TGCCAGAACG CATCTTCATT CCTAAAAAGG GGACGACCAT          8280

GGCTTACGAG AATGGAGACT TTGTTCCAGC TGGATCGGTT TCAGCAGGAG ATATCTTGAT          8340

TGATGGGAAT GCCATTGGTG ATGTTGGAAA TGTTGTTCTT CGTGACCGTA AGGTCTTGTC          8400

AGAGGATGGA ATTTTCATCG TGGCTATTAC AGTCAACCGT CGTGAGAAGA AAATTGTGGC          8460

TAGGGCTCGT GTTCACACGC GTGGATTTGT TTATCTCAAG AAGAGTCGCG ATATTCTCCG          8520

TGAAAGTTCA GAATTGATTA ACCAAACGGT AGAAGAGTAT CTTCAAGGAG ATGACTTTGA          8580

CTGGGCAGAT CTCAAAGGTA AGGTTCGTGA CAATCTGACC AAGTACCTCT TTGATCAAAC          8640

CAAGCGTCGC CCAGCCATTT TACCAGTAGT CATGGAAGCA AAATAATCGT TGAAATAAAC          8700

AGAGAGAAAG TCGAGTTTCG GCTTTTTCTT ATAGAAAAAT AGAAGGAGAA AATCATGGCA          8760

GTGATGAAAA TCGAGTATTA CTCACAAGTA TTGGATATGG AGTGGGGGGT GAATGTCCTC          8820

TACCCTGATG CCAATCGAGT GGAAGAACCA GAGTGTGAAG ATATTCCCGT CTTGTACCTT          8880

TTGCACGGGA TGTCTGGAAA TCATAATAGT TGGCTTAAGC GGACCAATGT AGAACGCTTG          8940

CTTCGAGGAA CTAATCTCAT CGTTGTTATG CCCAATACCA GCAATGGTTG GTACACCGAT          9000

ACCCAGTATG GTTTTGACTA CTACACGGCT CTAGCAGAGG AATTGCCACA GGTTCTGAAA          9060

CGCTTCTTCC CTAATATGAC GAGCAAGCGT GAAAAGACCT TTATCGCTGG TCTTTCTATG          9120

GGAGGCTACG GCTGCTTCAA ACTGGCTCTT ACGACAAATC GTTTTTCTCA TGCAGCTAGT          9180

TTTTCAGGTG CCCTCAGCTT TCAAAACTTT TCTCCTGAAA GTCAAAATCT GGGAAGTCCA          9240

GCCTACTGGA GAGGTGTTTT TGGAGAGATT AGAGACTGGA CAACTAGTCC CTATTCTCTT          9300

GAAAGTCTGG CTAAAAAATC GGATAAAAAG ACCAAACTTT GGGCGTGGTG TGGCGAACAG          9360

GATTTCTTGT ACGAAGCCAA TAATCTCGCA GTGAAAAATC TCAAAAAACT AGGTTTTGAT          9420

GTGACCTATA GCCATAGCGC TGGAACTCAC GAGTGGTACT ACTGGGAAAA ACAATTGGAA          9480

GTTTTTTTAA CAACCCTACC AATTGATTTC AAATTAGAAG AGAGACTGAC TTAGTTTGAA          9540

CTTCAGCATA GGGGGAGTAG AACTAAAATA AAATATGTTT TCACTAGACT TTTCAAACGm          9600
```

472

```
AAGTAGTAGA ATAGTAATAA AATACTGGAG GAAAGAGAGT AGGAAATGTA CCGTTATCAA      9660

ATTGGCATTC CCACATTAGA ATATGATCAG TTTGTCAAAG AACATGAATT AGCCAATGTA      9720

TTACAAAGTA GTGCTTGGGA GGAAGTTAAG TCTAATTGGC AACATGAGAA GTTTGGTGTT      9780

TACAGGGAAG AAAAATTACT GGCGACAGCT AGTATTTTGA TTAGAACTCT TCCGCTAGGC      9840

TATAAAATGT TTTACATCCC AAGAGGACCT ATATTGGATT ATGGGGATAA AGAACTCTTG      9900

AATTTTGCCA TTCAGTCTAT TAAGTCCTAT GCTCGCAGTA AGAGAGCGGT TTTTGTGACT      9960

TTTGACCCAA GTATTTGCCT ATCTCAAAGT TTAATCAATC AGGAAAAGAC AGAATTTCCT     10020

GAAAATCTGG CTATTATTGA TAGTTTGCAA CAAATGGGAG TAAGGTGGTC AGGAAAAACG     10080

GAGGAAATGG GAGACACCAT TCAACCTCGT ATTCAGGCGA AAATATACAA GGAAAATTTT     10140

GAAGAAGATA AACTTTCCAA GTCAACAAAA CAGGCTATTC GAACAGCACG AAACAAAGGG     10200

CTTGAGATTC AATATGGTGG ACTGGAACTA TTAGATTCAT TTTCGGAGTT GATGAAAAAA     10260

ACTGAGAAGC GAAAAGAGAT TCATTTGAGG AATGAAGCCT ATTATAAAAA ATTGTTAGAT     10320

AATTTTAAGG ACAAGGCCTA TATCACCTTG GCCACCTTGG ATGTTTCTAA ACGTTCGCAA     10380

GAGTTAGAAG AACAGTTAGC GAAAAATAGA GCCTTGGAAG AGACCTTTAC TGAGTCGACT     10440

CGAACTTCAA AAGTAGAAGC GCAGAAGAAG GAAAAAGAAC GTTTGTTAGA GGAATTGACC     10500

TTCTTGCAGG AATATATAGA TGTAGGTCAA GCGAGAGTTC CTTTAGCGGC TACTTTGAGT     10560

TTGGAATTTG GTACTACCTC TGTCAATATA TATGCTGGTA TGGATGATGA TTTTAAACGT     10620

TACAATGCAC CAATTTTAAC TTGGTATGAA ACGGCTCGCT ATGCCTTTGA ACGAGGTATG     10680

ATCTGGCAAA ATTTAGGTGG TGTTGAAAAC TCTCTCAATG GTGGACTTTA TCATTTTAAG     10740

GAAAAATTTA ATCCAACGAT TGAAGAATAC TTGGGTGAAT TTACAATGCC CACTCATCCT     10800

CTCTATCCTC TGTTAAGACT TGCTCTTGAT TTCCGTAAAA CATTAAGAAA AAAACATAGA     10860

AAGTAAGTAT ATGGCACTAA CAACACTCAC GAAAGAAGAG TTTCAGACTT ATTCTGATCA     10920

GGTTTCTTCT CGTTCCTTTA TGCAATCTGT CCAGATGGGG GATTTGCTAG AAAAAAGAGG     10980

GGCTCGAATT GTTTATCTTG CTTTGAAACA AGAAGGAGAA ATTCAAGTTG CAGCTCTGGT     11040

TTATAGCCTG CCCATGCTGG GTGGTCTGCA TATGGAACTC AATTCGGGGC CGATTTATAC     11100

CCAACAAGAT GCTCTTCCAG TTTTTTATGC AGAGTTAAAA GAATATGCCA AGCAAAATGG     11160

TGTATTAGAG TTGCTTGTAA AACCCTATGA AACTTATCAA ACTTTTGATA GCCAAGGTAA     11220

TCCAATAGAT GCTGAGAAAA AAAGTATTAT TCAAGATTTG ACTGATTTAG GTTATCAATT     11280

TGATGGCTTA ACAACAGGTT ACCCAGGTGG AGAACCAGAT TGGTTATACT ATAAAGATTT     11340

AACTGAATTA ACTGAAAAGA GTTTGCTTAA AAGTTTTAGC AAAAAGGGTA AACCCTTGGT     11400
```

473

```
GAAAAAGGCT GAAACCTTTG GCATTCGGTT GAAAAAGTTA AAACGTGAAG AACTATCGAT    11460

TTTTAAGAAT ATAACAAAAG AAACCTCTGA ACGTAGAGAA TATAGTGATA AAAGTTTAGA    11520

ATATTATGAG CATTTTTATG ATACTTTTGG AGAACAAGCG GAGTTTCTCA TAGCAAGCTT    11580

AAATTTTTCG GACTATATGA GCAAATTGCA AGGTGAACAA AGTAAACTAG AAGAAAACTT    11640

GGACAAGTTG CGACTTGATT TGAGTAAAAA TCCTCATTCT GAGAAAAAAC AAAATCAACT    11700

GAGAGAATAT TCTAGTCAAT TTGAAACGTT TGAAGTTCGA AAAGCAGAAG CGCGAGACTT    11760

GATTGAAAAA TATGGAGAAG AAGATATTGT TTTAGCTGGG AGTTTATTTG TTTATATGCC    11820

TCAGGAAACG ACTTATCTCT TTAGTGGTTC CTACACTGAG TTTAATAAGT TCTATGCCCC    11880

TGCACTGCTT CAAAAATATG TTATGTTGGA AAGCATAAAA CGTGGAATAC CTAAATACAA    11940

CTTCCTAGGC ATTCAAGGGA TTTTTGATGG AAGTGATGGT GTTTTGCGTT TTAAACAGAA    12000

TTTTAATGGC TATATTGTAC GCAAAGCAGG TACTTTCCGT TACCATCCAT CGCCTTTAAA    12060

ATACAAAGCT ATCCAGTTAC TCAAAAAAAT AGTAGGACGT TAAGATGAAA AAGTCAGTAT    12120

TTAGATTTCT TTTAGCTTCT TTTAGTAAAA TAATTCTTAT TTGCTAGAAA GGTGGAGAGA    12180

CATGCGCTGG CTTTTTCGTT TGATAGGGGC TTTCTTTTCT TTTGTGTGGC GTTTGTTTTG    12240

GCGTCTGGTT TGGATAGTTG TGCTCTTATG TGTGCTTGCT TTCGGACTTC TCTGGTATCT    12300

GAACGGAGAT TTTCAAGGAG CGCTAAAGCA AGCAGAACGG TCAGTAAAAA TTGGTCAACA    12360

AAGTATTGAC CAATGGGAGA AAACAGGGCA ACTGCCTAAG TTAAGCCAGA CAGATAGTCA    12420

CCAGCATTCT GAAGGAAGGT GGGCACAGGC CTCTGCTCGT ATTTACCTGG ATCCGCAGAT    12480

GGATTCACGC TTTCAAGAGG CTTATTTAGA AGCAATCCAG AACTGGAATC AAACTGGTGC    12540

TTTTAACTTT GAACTCGTGA CTGAGTCTAG TAAGGCGGAT ATTACGGCTA CGGAGATGAA    12600

CGACGGAGGC ACTCCTGTGG CAGGAGAGGC GGAAAGTCAA ACTAATCTCT TAACAGGGCA    12660

ATTCTTGTCC GTAACGGTGC GGTTGAATCA TTATTATTTG TCCAATCCAT ACTATGGCTA    12720

CTCCTATGAA CGCCTTGTCC ATACGGCAGA ACATGAGTTA GGTCATGCGA TTGGCTTGGA    12780

CCATACAGAT GAGAAGTCTG TCATGCAACC AGCAGGTTCC TTTTATGGTA TCCAGGAAGA    12840

GGATGTTGCA AACCTCCGAA AAATATATGA GACTAGTGAG TAGGGTACTA TCTTTCCCTA    12900

CTTTTTTTGC TATAATGGAA CTATGAACAA CTTGATTAAA TCAAAACTAG AGCTCTTGCC    12960

GACCAGCCCT GGTTGCTACA TTCATAAGGA TAAAAATGGC ACCATTATCT ATGTAGGAAA    13020

GGCTAAAAAT CTGCGTAATC GAGTACGGTC CTATTTTCGT GGAAGTCATG ATACCAAGAC    13080

AGAGGCTCTG GTGTCTGAAA TTGTGGATTT TGAATTTATT GTTACGGAGT CTAATATTGA    13140
```

474

```
GGCACTTCTC CTAGAAATCA ACCTGATCAA GGAAAACAAG CCCAAGTACA ATATCATGCT    13200

CAAGGATGAC AAGTCCTATC CTTTCATCAA AATCACCAAT GAGCGCTATC CACGCTTGAT    13260

TATCACTCGT CAGGTCAAAA AGGACGGAGG TCTTTATTTT GGACCCTATC CCGATGTGGG    13320

GGCAGCCAAT GAAATCAAGC GGTTGCTGGA TCGGATATTC CCTTTTCGTA AGTGTACCAA    13380

CCCGCCCTCT AAGGTCTGTT TTTATTACCA TATCGGCCAG TGTATGGCCC ACACCATCTG    13440

TAAGAAGGAT GAGGCTTATT TCAAGTCTAT GGCCCAGGAG GTGTCTGATT TTCTGAAAGG    13500

TCAGGATGAC AAAATCATCG ATGATCTCAA GAGTAAAATG GCAGTAGCAG CACAAAGTAT    13560

GGAGTTTGAA CGTGCGGCGG AATACCGTGA CCTGATTCAG GCTATTGGAA CGCTTCGAAC    13620

CAAGCAACGG GTCATGGCGA AAGATTTGCA AAATCGCGAT GTCTTTGGCT ACTATGTGGA    13680

TAAGGGCTGG ATGTGTGTGC AGGTTTTCTT TGTCCGTCAG GtAAGCTCAT CGAGCGCGAT    13740

GTCAATCTCT TCCCCTACTT CAATGATCCA GATGAGGATT TTTTGACCTA TGTAGGACAA    13800

TTCTATCAAG AAAAATCTCA TCTAGTTCCC AATGAGGTAC TGATTCCGCA GATATTGACG    13860

AAGAAGCTGT CAAGGCTTTG GTGGATTCCA AGATTCTTAA GCCTCAACGT GGAGAGAAAA    13920

AACAACTGGT CAATCTAGCC ATAAAAAATG CTCGTGTTAG TCTAGAGCAG AAGTTCAATC    13980

TGCTAGAAAA ATCTGTCGAA AAGACTCAAG GAGCTATTGA AAATCTAGGG CGTTTGCTCC    14040

AAATCCCGAC CCCAGTACGT ATCGAGTCCT TCGATAACTC TAATATCATG GGAACTAGCC    14100

CTGTTTCGGC TATGGTGGTC TTTGTCAACG GTAAACCGAG TAAGAAGGAT TACCGTAAGT    14160

ACAAGATAAA AACGGTTGTT GGACCAGACG ACTATGCCAG CATGAGAGAG GTCATTCGCA    14220

GACGCTATGG TCGAGTACAG CGTGAGGCTT TGACTCCTCC AGATTTGATT GTGATTGATG    14280

GGGGGCAAGG TCAAGTCAAT ATCGCTAAGC AGGTTATCCA AGAGGAACTG GGCTTGGATA    14340

TTCCAATTGC TGGGCTGCAA AAGAATGATA AGCACCAAAC CCATGAATTG CTCTTTGGAG    14400

ATCCGCTTGA GGTGGTGGAT TTGTCTCGCA ATTCTCAGGA ATTTTTCCTC CTCCAACGCA    14460

TCCAAGATGA GGTGCACCGC TTTGCTATCA CTTTCCACCG CCAACTGCGC TCCAAAAATT    14520

CTTTCTCATC TCAATTGGAT GGGATTGACG GTCTGGGACC TAAACGCAAG CAGAATCTTA    14580

TGAAGCATTT CAAGTCTTTG ACCAAAATCA AGGAAGCCAG TGTGGATGAG ATTGTCGAAG    14640

TTGGGGTACC TAGAGTCGTT GCAGAGGCTG TGCAAAGAAA GTTGAACCCG CAGGGAGAAG    14700

CCTTGCCTCA AGTAGCAGAA GAAAGAGTAG ATTACCAAAC GGAAGGAAAC CACAATGAAC    14760

CATAAAATCG CAATTTTATC AGATGTTCAT GGCAATGCGA CGGCGCTAGA AGCAGTGATT    14820

GCAGATGCTA AAAATCAAGG GGCCAGTGAA TATTGGCTTC TGGGAGATAT TTTTCTTCCT    14880

GGTCCAGGCG CAAATGACTT AGTCGCCCTG CTAAAGGACC TTCCTATCAC AGCAAGTGTT    14940
```

475

```
CGAGGCAATT GGGATGATCG TGTCCTTGAG GCTTTAGATG GGCAATATGG CTTAGAAGAC   15000

CCACAGGAAG TTCAGCTCTT GCGTATGACA CAGTATTTGA TGGAGCGAAT GGATCCTGCA   15060

ACGATTGTCT GGCTACGAAG CTTGCCTTTG CTGGAAAAGA AAGAAATTGA CGGATTGCGC   15120

TTTTCTATCT CTCATAATTT ACCTGACAAA AACTATGGTG GTGACTTGCT AGTTGAGAAT   15180

GATACAGAGA AATTTGACCA ACTGCTAGAT GCGGAAACGG ACGTGGCAGT TTATGGTCAT   15240

GTTCACAAGC AGTTGCTTCG TTATGGAAGT CAAGGGCAAC AAATCATCAA TCCAGGGTCG   15300

ATTGGCATGC CCTATTTTAA TTGGGAGGCG TTAAAAAATC ACCGTTCCCA GTATGCCGTG   15360

ATAGAAGTTG AAGATGGGGA ATTACTCAAT ATCCAATTTC GTAAAGTTGC TTATGATTAC   15420

GAAGCTGAGT TAGAATTGGC CAAGTCCAAG GGGCTTCCCT TTATCGAAAT GTATGAAGAA   15480

CTGCGTCGTG ACGATAACTA TCAGGGGCAC AATCTGGAAT TATTAGCCAG CTTAATAGAA   15540

AAGCATGGGT ATGTAGAGGA TGTGAAGAAT TTTTTTGATT TTTTGTAAGA GTTTCCTAAA   15600

ATAGCCAATG CAAACTAAAA AAGCGATTTG CTGGTCCAAT CGCTTTTAGT ATATCTTATA   15660

CTCAATGAAA ATCAAAGAGC AAACTAGGAA GCTAGCCGTA GGTTGCTCAA AGCACAGCTT   15720

TGAGGTTGCA GATAAAGCTG ACGTGGTTTG AAGAGATTTT CGAAGAGTGT TATTGTAACT   15780

GAGATTGATC TGGGAGGTAA GAACCACCTA GATAGGTATT GCTGAGTTTT TCAAGGGTTC   15840

CGTCTTGATA GAGTTCTTTG AGCGCTTTAT CAAATTGCTC TTTAAACTCT TTTTGGTCGC   15900

TTGAGAAAAT GATATAATTG CTGGGGCTAT CTGCAGAAGG TAAATCAACG ACTGAGAGGT   15960

CTAAACCACG GTCCTTGATA ATCTTTTGAA CGGATACCTT GTCAAAAACT AGGAAATCAA   16020

ACTCTCCGTT AGCAAGGTCT AGGATTCGTT TACCAATATC CTCACCAGAA AAATTAATTG   16080

TAGCGGGATT ATCAGTGTGT TTCTGATTCC AGTTATTGAT GAATTGAGCG TTAGAAGTTC   16140

CGGTATCCTC TTGTGTTGTT TTACCAGCGA TCTGGTCAAG AGAAGTCAAA GGATTTTTCT   16200

TGTTGCTGAC AAGGACGAGG GGATTGTTGG AAATTGGAAG CGAGTAAAGG TATTTTTCAG   16260

CACGCTCTTT TGTGTAACTC AAGTTATTGG CCGCAGCCTG ATAGTGACCA GAATCAAGTC   16320

CTGGGAAGAT GCTCTCCCAG GCGGTTCTTT GGAATTGAAT CTCGTAGTCG CTGAGTTTTT   16380

CATCTACTGC CTTTAAAACT TCGATATCAA AGCCTGTCAG ATTGCCCTTG TCTTCGTAGT   16440

CAAATGGTGG CACGTCGCCA GCTGTAGCAA GGACGATTGT CTTTTGAGCG CTAGTCTCTT   16500

TGGGTGTAGC TTGATTCTCA CAGGCAACCA AAAATGGTAG GATAGCTAGT AATAGGCTAA   16560

ATTTTTTCAT ACTGTCTCCA TTCAAATGTA AAG                                16593
```

(2) INFORMATION FOR SEQ ID NO: 53:

476
        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 3510 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

```
GGGATATCCT TATATCCTTG TTCCTGGAAC CATTGTGGGA ATTGCTCAAC AGTTTTTTCA        60

CCTTGAATTC CTGGTGCAAT GACAGTAAGA ATTTCGAAAT CACGATCTGG TTTCGCCGCT       120

AGTTCCATCA ACTCTGGCAT ACTTTTCTTG CATGGACCAC ACCATGAAGC CCAAAACTTC       180

AAGTAAACCT TTTTACCCTT AAAATCAGAT AACTTAACTT CTTTGCCATC CATGGATTGC       240

AATGTGAAGT CTGGAGCATC TTTTTCCAACA GCAATTTGTT GTACAGTCGT TTGTTGTTTT      300

GGCTGTTGTG CTGCTTGAGT CTTTTTAGTT TCTTCCTCAC CACAGGCCAT CAATACAACT       360

AATGACAAGA GACTTAAGCC AGCAAACATT ACTTTTTTCA TTTGTCCTCC TTTATTCAAA       420

AATTCCAGCT AGAACATTTA CTTGTCCTAA TAGTAACAAA ATTCCCATTA AAACAATGAG       480

GAAACCACCA ATTTTCTTTA GTAGCATCAT ATGACGCTTG ATTTTACTAA AATATGGCAT       540

GACTAGACCT GAAGCTAGTG CCAATACCAA GAAAGGAAGG GCCATGCCaG AGTGTAAATG       600

AGAGTATAAA TCGCTCCTTG CCAAGCGCCA TTGCCTCCAG AAGCCGCAAG TGCTAAAACA       660

GAACTTAAAA CTGGACCAAT ACAAGGTGTC CAACCAAAGC TAAAGGTAAT ACCAACTAAA       720

AAAGCTGACC AATAACGATT AGAATCTGAT TTTTTAAAGG TAAAACTTTT TTGAACTTCT       780

AATTTCTTCA AATGAAAAAT TTCCATCTGG TGAAGACCCA AAATGATAAT AATAGCTCCC       840

ATGCCATATC.GAAACCAATT TGCATAGAGA ATATGACCAA AGTAACCAGC ACCAAAGCCT       900

AGAATAAAGA AAATGAGAGA GATACCAGCG ATAAAGCAAA GTGTTCGAAT CAAGCCTGAC       960

CAGAGAACCT TTCTCCCAAA CAAAGAAAAG CTTTTTGCAC TTTCTTGATC ATCCAATAAA      1020

ATCCCAGCAT AGACTGGCAG AAGAGGAAAA ATACAAGGAG AAAAAAGGA TAAAACACCT      1080

GCTAGAAAAA CAGAGATTAA AAATACTATC GTTCCAATA AAGAACCAAC TTTCTTAATA      1140

ATTCTAATCC TATTTTACTA TATTCAATTT TATTTGTAAG CTTTCTGCTA CGCAAAATCG      1200

TATCGGGCAC TATTGGACCA ATCTTTTCTT TTGCTAGTCA AGGCGGATCT TATCCCCCAA      1260

AATAGCCAAA AAGCAACGAC AAGGATTACT CATCGCTGCT TTTGTGAACG AAAATGTCTT      1320

TTAGGTCTGA CATTTCATAA ATCATGTTTT ACTTGAGTTT GTCAAGGATT GCTTTAAGCT      1380

CCTCTACTAG TTTAGTTTCT GTCTCTGCTG AGCCATTTTC TTCTTTCACG AAATCAAGGG      1440

TTTCTTGGAG AAGGTTTTGG GCTTTGGCAA GGACTTTTTT ATCCGCTTTT TCTGCATCTA      1500
```

477

```
GCTGTCCTAG AACCTTGATC AATTCCGTGC TTAATTGCTG GATTTCTGAC TCTTTCTTAC        1560

GGCGAATCAG CCAGAAGGCA ATCACGCCTA GGAGGGCAAG TAGACTGACC ACAATCACTC        1620

CTGCCGGAAC TGAGTTTGTT TCAGTCATCT TATCTGAATC CTTACTATCT TCCGTTCCTT        1680

GTTTTGCATC CTTCTTGTCC TGTGCAGGCT TGCTGTCGCT AGCATTTGCT TTCACATCTT        1740

TGAGAGAGTC CAAGGCAGCC CAGCCTTCAC AGACTCTACT GCAGTATGCA GACCTTACTC        1800

TGTCAAGGCA CTATCTTCCG GAGCTTTTTG AGCATCTAGG AGGACAGCCT TGGTTGCATC        1860

GATTTTCGGA TCAGATACTG TTGCCAAAGC TTTCAAGCGT TGGTCTAACT CTTGACTCAA        1920

GGCACGAAGT TCAGACTTGT CAACTTGCTC TTGAGCTTGT GTGCTCGTTG AGCTAGCCGA        1980

AGCGCTTGCT ACCACTCTAG GATCTTGAGT CGGAGCTGAG CTTGGAGCTG GGACAGGGCT        2040

TGCAGGTTGA CTAGGAACAG TTATGGTATA TTGAAACTAG AATAGTACAT ATGGACTTCT        2100

AAAACATTGT TAGAATTCGA TTTTACTGTC CTGATCGATT TGTCCTATTC TTATTTCATT        2160

TTACTATAAT AACCGATGGT GTGGTTAATG TTGGTAAGAG AAACTTCTGA AACCAAGCTT        2220

CAAAAAAGTC GCTCGTCATC GTCTCTTCGT AAGTCATTGG AGCGATTAAT TCACCATTTG        2280

TTAGACCTGC AACCAAAGAA ATCCTCTGAT ATCTTCTTCC AGATACTTTG CCTCTTATTA        2340

ACTGACCTTT TAATGAGCGA CCATATTCTC GATAAAAATA AGTATCGAAT CCTGTTTCGT        2400

CAATCTAAAC AGGTGCTAGG TGCTTTAAAC TATTAAAATT CTTAAGAAAT AAGGCTACTT        2460

TTTCTGGGTC TTGTTCATAG TAGGTGTGGT TCTTTTTTTC GAGTGTAGCC CATAGCTTTG        2520

AGCGCATAGT GGATGGTAGT TGGATGACAG CCAAAkTCAG AAGCTATTTC AGTCAAATAA        2580

GCrTCTGGAT TGTCAGTAAG ATAGTTTTTA AGTCTATCTC TATCAACTTT TCTTGGTTTT        2640

GTTCCTTTTA CTTGGTGGTT TAGCTCTCCT GTTTTCTCTT TTAGCTTTAA CCAGCCATAA        2700

ATGGTATTAC GTGAGATTTG GAAAACGTGT GATGCTTCTG TTATACTACC TATTCGCTCA        2760

CAATAAGAGA GAACTTTTTT ACGAAAATCT ATTGAATATG CCATAAGAAG ATTATACCAC        2820

ATTGTGTACT ATTTTTGGTT CATTTCACTA TAACACAAAA TAGATTATTA TTACATAACA        2880

AAAAGAGGT CTAAACCTCT TAACTCAATT ACTCCGCCAG TAGGACTCGA ACCTACGACA        2940

TCATGATTAA CAGTCATGCG CTACTACCAA CTGAGCTATG GCGGATTAAA GCTAAGCGAC        3000

TTCCCTATCT CACAGGGGGC AACCCCCAAC TACTTCCGGC GTTCTAGGGC TTAACTTCTG        3060

TGTTCGGCAT GGGTACAGGT GTATCTCCTA GGCTATCGTC ACTTAACTCT GAGTAATACC        3120

TACTCAAAAT TGAATATCTA TTCAATTTAA GAAAACCGTT CGCTTTCATA TTCTCAGTTA        3180

CTTTGGATAA GTCCTCGAGC TATTAGTATT AGTCCGCTAC ATGTGTCGCC ACACTTCCAC        3240
```

478

```
TTCTAACCTA TCTACCTGAT CATCTCTCAG GGCTCTTACT GATATATAAT CATGGGAAAT        3300

CTCATCTTGA GGTGGkTtCA CACTTAGATG CTTTCAGCGT TTATCCCTTC CCTACATAGC        3360

TACCCAGCGA TGCCTTTGGC AAGACAACTG GTACACCAGC GGTAAGTCCA CTCTGGTCCT        3420

CTCGTACTAG GAGCAGATCC TCTCAAATTT CCTACGCCCG CGACGGATAG GGACCGAACT        3480

GTCTCACGAC GTTCTGAACC CAGCTCGCGT                                          3510
```

(2) INFORMATION FOR SEQ ID NO: 54:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 20986 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

```
CGGAGAAAAA CATGGCTAAG TCAAACTTTG AAAAAGTAGA ATCAGTTGTT GGCTGGGTTC          60

GTGATAAGAA AATCACAGGC TACCGTATCT CTAAAGAAAC GAATGCGCGT GAAATGTCTA         120

TCATTGCTCT GGCGCAGGGT CGTGCAAAAG TAAAAAATAT TTCATTTGAA ACAGCCCTAG         180

GCCTAATTGA TTTCTATGAA AAAAATTATG AAAAATTTGA AGATTAATCT TTGGATAACG         240

GCGGATTCTT GACCTTCAAG TAGTAGAGAT AGAGAATCTG CCTTTTCATT TTGAGGACAG         300

CAAAAAGACT GCACGGTTGA TGCAGCCTTT TCTTTTTATT TGAGATAGCG TTGAAGGAAC         360

TCTTTTGTTC GGTCTTCTTT AGGATTGGTG AAGAGGTCTT CTGGTTTACC TTCTTCAGCG         420

ATCACGCCCT TATCCATAAA GATAACACGG TGAGAGACAT CACGGGCAAA TTCCATTTCA         480

TGGGTTACGA CAATCATGGT CAAGCCTTCC TGAGCCAGGT CCTGCATGAT TTTGAGGACT         540

TCTCCAACCA TTTCTGGATC GAGAGCTGAT GTTGGTTCAT CAAAGAGAAT AGCGTCCGGA         600

TTCATGGAGA GGGCACGAGC GATGGCCACA CGTTGTTTTT GACCACCTGA GAGTTGTTTT         660

GGTTTGGCTT GCCAGTAGCG TTCTCCCATG CCGACCTTTT CCAGGTTTTC TTTGGCAATC         720

TTTTCAGCTT CTGTGCGTTC GCGTTTTAGG ACAGTTGTCT GAGCGACGAT TGTGTTTTCA         780

AGAACATTGA GATTTTCAAA GAGGTTAAAG GATTGGAAAA CCATCCCCAA CTTTTCACGG         840

TATTGCGTGA GGTCATAGCC TTTTTCGAGG ACGTTTTGTC CATGATAAAG GATTTGTCCA         900

TCAGTTGGTG TTTCAAGTAG GTTAATGGAG CGTAGGAAGG TCGATTTTCC GCTTCCAGAG         960

CTTCCGATGA TAGAGATGAC CTCTCCCTTG TGGACAGTGA GTGAAATGTC TTTTAGCACT        1020

TCGTTTTGTC CATAGGATTT TTTGAGGTGT TTAATTTCAA GGATTGCTTG TGTCATTATT        1080

TCAAATCCTC CGTTTGCATT TGGTTAGCAC CTGTAGTGTA GGTATCCATG TCCATTCTGC        1140
```

479

```
GCTCGATAAA GCGTAGGATA CGTGTTACGG TGAAGGTGAG GACAAAGTAA ATCACGGCGA      1200

TGATTGTAAA TGTCTGGAAG TATTGATAGG TTTGTGTTGC CACGGTATTT CCTGAGAAAT      1260

AAAGTTCGAC AACAGAGATA ACGTTCAATA CAGATGTATC TTTGATATTG ATGACAAATT      1320

CATTACCAGT TGCAGGTAGG ATGTTACGGA CTACCTGAGG TAGGACAATC TTACGCATGG      1380

TCTGGTTATG GGTCATACCA AGAGCAGTCG CAGCTTCAAA TTGTCCCTTG TCAACTGCTA      1440

GGATACCACC ACGGACGATT TCAGTCATGT AGGCACCGGT ATTGATTGAA ACGATGAAGA      1500

TAGCAGCCAG TGTACGGTCA AGGTTGATCC CGAAAGCTTG GGCAGTTCCA TAGTAGATAA      1560

CCATCGATTG AACAATCATT GGCGTACCAC GGAAAATTTC AATGTAGACA TTGAGAACCC      1620

AGCCGACTAG TTTTTGTAGG CCGTAAATGA CTTTGTTTTC AGAGAGAGGA GCAGTACGGA      1680

AGACACCAAT GGCAAGTCCA ATAATGAGAC CTATGATGGT TCCGACGATA GAGATTAAAA      1740

GAGTGATACC AGCACCACGC AAGAGTTGTT GCCAGTTTTC AGAAAGAATT TTAGCAACTT      1800

GGCTAAAGAA ACTACTGCTA GTCTCTTCAG TTGTTGTAGC TTCGGCAGGT TGTTCCTTGA      1860

TCATACGATC CATCAAGGCA ACTTGGTCAT CTTTTGAAAT GGTTTCAATG CTGGCATTGA      1920

TTTGGCTAAT ACGATTGTCA TTTTTACGAA GCCCGATAGC GATAGCTGTA TCTTCTTCCC      1980

CAGTTTTGAA ACCAGGTTCT ACTTGAATCA TCTTGAACTT AGAGTTCGCA GCTTCAGCAG      2040

TCAGTGCTTC TGGACGTTCA GAAACATAAG CATCAATGAC ACCAGCCTCA AGAGCTTGTC      2100

GCATTTGAGC GAAGTCTCCC ATGGCTGTTT CTTTTTTAGC ACCTGGGATT TGTGCAATCA      2160

AGTTATAAAG GTAGACCCCT TGTTGAGAAG TGATTTTTGC ACCGTTAAAG TCATCCAAAG      2220

ATTTAGCACT TGCGTAGGCA GAATCTTTTT TGACAAGCAA AACTGGTTCG CTAGTATAGT      2280

AACTGCTCGA AAAGGCAATT TCTTGTTTGC GTTCTGCAGT TGGACTCATA CCTGCGATAA      2340

TCATGTCAAT CTTACCAGAA GTAAGGGCAG GGACTAGACC TTCCCACTTG GTTTTAACAA      2400

CCAAAGGTTC TTTACCTAAG TCCTTAGCGA TTTTCTTGGC GATTTGAACA TCGTATCCGT      2460

TGGCATACTG ATTGGTCCCA TCGATTTTGA CAGCTCCGTT GCTATCATCA TCCTGGGTCC      2520

AGTTAAAGGG AGCATATGCT GCTTCCATAC CGATGCGTAA ATATTCATCG GCTTGAGCAA      2580

CATTGACAAG TCCTAGCATC AGCAAGAGAC TTGTGAAAAT AGATAAGTAy ATGTGGCTCA      2640

TGATTTCTCC TATTCTGATC TATTAAAAAA TAACTGTCTC CTATTTTATC GAAAAATGCG      2700

TAATTTTTCA ACATAAGTAA GTCTTTACTT ACGAAAAAAT GCTATAATGA TAAGAAAGAT      2760

AAAAAGGGGG CTTAGTTGAT GAAAAAAACT TTTTTCTTAC TGGTGTTAGG CTTGTTTTGC      2820

CTTCTTCCAC TCTCTGTTTT TGCCATTGAT TTCAAGATAA ACTCTTATCA AGGGGATTTG      2880
```

480

```
TATATTCATG CAGACAATAC GGCAGAGTTT AGACAGAAGA TAGTTTACCA GTTTGAGGAG          2940

GACTTTAAGG GCCAAATCGT GGGACTTGGA CGTGCTGGTA AGATGCCTAG CGGGTTTGAC          3000

ATTGACCCTC ATCCAAAGAT TCAGGCCGCG AAAAACGGTG CAGAACTAGC AGATGTGACT          3060

AGCGAAGTAA CAGAAGAAGC GGATGGTTAT ACTGTGAGAG TCTATAATCC AGGTCAGGAG          3120

GGCGACATAG TTGAAGTTGA CCTCGTCTGG AACTTAAAAA ATTTACTTTT CCTTTATGAT          3180

GATATCGCTG AATTAAATTG GCAACCTCTG ACAGATAGTT CAGAGTCTAT TGAAAAGTTT          3240

GAATTTCATG TAAGGGGAGA CAAGGGGGCT GAAAAACTCT TTTTCCATAC AGGGAAACTT          3300

TTTAGAGAGG GAACGATTGA AAAGAGTAAC CTTGATTATA CTATCCGTTT AGACAATCTT          3360

CCGGCTAAGC GTGGAGTTGA GTTGCATGCC TATTGGCCTC GGACCGATTT TGCTAGCGCT          3420

AGGGATCAGG GATTGAAAGG GAATCGTTTA GAAGAGTTTA ATAAGATAGA AGACTCGATT          3480

GTTAGAGAAA AAGATCAGAG TAAACAACTC GTTACTTGGG TCCTCCCTTC GATCCTTTCC          3540

ATCTCCTTGT TATTGAGTGT CTGCTTCTAT TTTATTTATA GAAGAAAGAC CACTCCTTCA          3600

GTCAAATATG CCAAAAATCA TCGTCTCTAT GAACCACCAA TGGAATTAGA GCCTATGGTT          3660

TTATCAGAAG CAGTCTACTC GACCTCCTTG GAGGAAGTGA GTCCCTTGGT CAAGGGAGCT          3720

GGAAAATTCA CCTTTGATCA ACTTATTCAA GCTACCTTGC TAGATGTGAT AGACCGTGGG          3780

AATGTCTCTA TCATTTCAGA AGGAGATGCA GTTGGTTTGA GGCTAGTAAA AGAAGATGGT          3840

TTGTCAAGCT TTGAGAAAGA CTGCCTAAAT CTAGCTTTTT CAGGTAAAAA AGAAGAAACT          3900

CTTTCCAATT TGTTTGCGGA TTACAAGGTA TCTGATAGTC TTTATCGTAG AGCCAAAGTT          3960

TCTGATGAAA AACGGATTCA AGCAAGAGGG CTTCAACTCA AATCTTCTTT TGAAGAGGTA          4020

TTGAACCAGA TGCAAGAAGG AGTGAGAAAA CGAGTTTCCT TCTGGGGGCT CCCAGATTAT          4080

TATCGTCCTT TAACTGGTGG GGAAAAGGCC TTGCAAGTGG GTATGGGTGC CTTGACTATC          4140

CTGCCCCTAT TTATCGGATT TGGTTTGTTC TTGTACAGTT TAGACGTTCA TGGCTATCTT          4200

TACCTCCCTT TGCCAATACT TGGTTTTCTA GGGTTAGTTT TGTCTGTTTT CTATTATTGG          4260

AAGCTTCGAC TAGATAATCG TGATGGTGTT CTAAATGAAG CGGGAGCTGA GGTCTACTAT          4320

CTCTGGACCA GTTTTGAAAA TATGTTGCGT GAGATTGCAC GATTGGATCA GGCTGAACTG          4380

GAAAGTATTG TGGTCTGGAA TCGCCTCTTG GTCTATGCGA CCTTATTTGG CTATGCGGAC          4440

AAGGTTAGTC ATTTGATGAA GGTTCATCAG ATTCAAGTGG AAAATCCAGA TATCAATCTC          4500

TATGTAGCTT ATGGCTGGCA CAGTACGTTT TATCATTCAA CAGCACAAAT GAGCCATTAT          4560

GCTAGTGTCG CAAATACAGC AAGCACCTAC TCTGTATCTT CTGGAAGTGG AAGTTCTGGT          4620

GGTGGCTTCT CTGGAGGCGG AGGTGGCGGC AGTATCGGTG CCTTTTAAAG AGAGCTACCA          4680
```

481

```
TAGACTGAAA AAGTATGATA TAATGGAAGA TAGAAAAAAG ACAAACTATA AGAAAAGTCA    4740

ATAGTTTTAT CTAAACTATT TCTTATTTCA ATTTGATGAT TTGGCGATGA TTTTAGAGCA    4800

CGGCAAAAAG CCCTTGAAAA AGTCCATTTT TTCAAAGGTA ATCCTGTGTT AATTTCAGAA    4860

ATTACATCAC TTTTTGTTCG TCAAATGGCA GCTCTTTTTT AGGATATAAA ACAGGGTTCG    4920

GATAAGTTTT TTTGCAAGGT GGATGATGGC TACATTGTAA TGTTTTCCTT ATTCTAACTT    4980

AGTCTTAAGA TAGGCCTTAG AAGCAGGTGA AAAGCGAGGG CATGCTTTGG CAGCTTGTAT    5040

GAGTGCCCAC CGCAGATGAG GGGAACCCCG TTTGACCATT CTTCCAGCTA AATCAATCTG    5100

ACCTGACTGA TAAATAGAAG AATCCAGTCC AGCGAAAGCT TGTAATTGAG CAGGATTATC    5160

AAAGGCATGA ATATTTCGAA TCTCGGCTAA AATGACCGCC CTAAACGATC CCCAATCCCA    5220

GTAACCGTCG TGATGACCGA GTTGAACTCA GCCATCGAGT CATTGATACA TGTTTCCGCC    5280

TTGTCAATGA GCCTCTTGTA ATGCTTGATG ATTTCGAATT CACGAGCAGG AGATGTTGTT    5340

CCGATAGAAC GAGGTGCGAC TGAGAGGATA TCCTGAATTT TAGAAGCGGT CAATCGCTTA    5400

ATTTCTATCA GCTTATCAAA TCCTGCCTCA ATCCTTTTCT GAGGATTAGG GTAGCGTGTC    5460

AAGAGTTGGT AGGTATATTC TGAATGCTTT CCAACGATTT TATCCAACTC AGGAAAGATG    5520

ATATCAAGAC AACGAGTGTA TTGTACTTTC CAATCAGACT GTTTTTCTTG AGACGATGAA    5580

TATGTCTAGC CAGTATTTTT AGGTCTACTT GCCGATTATC GTGTTGAAAT TGTTCACGAT    5640

TGGGGTCAGA AAGAAGTTTA AGAGCGATGC CATGAGCGTC TTTCTTATCC GTTTTAGTCT    5700

TGCGAAGTGA TAATGATTTG GCAAATTCCT TGATGAGCAA AGGATTGTAG GTGTAAACTT    5760

TATATCCTTG TTCATGCAGG AAGTTCAGTA GATTAAAGGC ATAATGTCCA GTATCTTCAA    5820

GAGCGATGAG ACAGTCTTGG TTGATCTGTC GAATAGACAG ATCTAAGAGT TCAAAACCAG    5880

CTTTATTATT TGAAAAAGTG AGTGGTTTAA GAACAGTTTT TCCTGGAACA TTCAAGGCTG    5940

TAACATCGTG TTTATTTTTA GCGATATCAA TGCCTACATA AAGCATGGGA GTACCTCCAG    6000

ATATAGTATT TCAAGTCTAC TTGGTTATCC ACGAATTTTT TGCCTTGTTA CCTTAGACGA    6060

GATCAAACGT CTATGCGTTA TCAAACTCAT TACCAATTGA AACAAAAGCT GTGGTTAGAG    6120

CCTTTCGGAA ATCGTCAAGC GATTGGAGGA AATGAACTAA TCCATAGTGG CTTATTCCAA    6180

GTATACCACT TGGGCTTTGG CAGTAGCTAA CTGCGCTAAA TATAATATAG GGAGTAATCT    6240

ATGTATCTTA TTGAAATTTT AAAATCTATC TTCTTCGGAA TTGTTGAAGG AATTACGGAA    6300

TGGTTGCCGA TTTCCAGTAC AGGTCACTTG ATTTTAGCAG AGGAATTCAT CCAATACCAA    6360

AATCAAAATG AAGCCTTTAT GTCCATGTTT AATGTCGTGA TTCAGCTTGG TGCTATTTTA    6420
```

482

```
GCAGTTATGG TGATTTATTT TAACAAGCTC AATCCTTTTA AACCGACCAA GGACAAACAG        6480

GAAGTTCGTA AGACTTGGAG ACTATGGTTG AAGGTCTTGA TTGCTACTTT ACCTTTACTT        6540

GGTGTCTTTA AATTTGATGA TTGGTTTGAT ACCCACTTCC ATAACATGGT TTCAGTTGCT        6600

CTCATGTTGA TTATCTACGG GGTTGCCTTC ATCTATTTGG AAAAGCGCAA TAAAGCGCGT        6660

GCTATCGAGC CAAGTGTAAC AGAGTTGGAC AAGCTTCCTT ATACGACCGC TTTCTATATC        6720

GGACTCTTCC AAGTTCTTGC TCTTTTACCA GGGACTAGCC GTTCAGGTGC AACGATTGTC        6780

GGTGGTTTGT TAAATGGAAC CAGTCGTTCA GTTGTGACAG AATTTACCTT CTATCTTGGG        6840

ATTCCTGTTA TGTTTGGAGC TAGTGCCTTA AAGATTTTCA AATTTGTGAA AGCCGGAGAA        6900

CTCTTGAGCT TTGGGCAATT GTTTTTGCTC TTGGTCGCGA TGGGAGTAGC TTTTGCGGTC        6960

AGCATGGTGG CTATTCGCTT CTTGACCAGC TATGTGAAAA AACACGACTT CACCCTTTTT        7020

GGTAAATACC GTATCGTGCT TGGTAGTGTT TTGCTACTTT ACAGTTTTGT CCGTTTATTT        7080

GTATAAGAAA AACCTTGAAG GGGCAACTCT TCAAGGTTTT ATACTCTTCG AAAATCTCTT        7140

CAAACCGCGT CAGCTTTATC TGCAACCTCA AAACAGTGTT TTGAGCAGCn CTGCGGCTAG        7200

CCTCCTAGTT TGCTCTTTGA TTTTCATTGA GCTTTAAAAT CCAGTCATGG TAATCCCCAA        7260

TAGGCGGACA CCTCTTTCTT TCTTGCTTAA TTCTTCATAG AGTTGCAGGG CTATTTGGCT        7320

TATCTGACTA GCATCTTGTG TTTTTTGAGC AAGACTTTTT CGTTTGGTAA GAGTTGAAAA        7380

GTCCTCGTAG CGGATTTTCA AAATGACAAT TTTTCCAGCT TTTTCTTGTT GATGTAGATT        7440

GAGAGCGACT TTTTCTGATA GAAGAGTCAG CTCTTTTTTG ATATCTTCCT CAGCAAGGAG        7500

AATCTTCCCG TAGGTTTTCT CCTTGCCGAT TGATTTACGG ATGCGATTGG ATTTGACTGG        7560

AGAGTTGTGA ATGCCACGAG CCTTTCGATA CAGATCATAG CCTAGTCTAC CAAAACGGTC        7620

TATTAGGGTT ACCTCAGGAA CTTCAAGTAA ATCAGCACCA GTAAAAACGC CCATTTGATG        7680

AAGACGTTCT ACTGTCTTTT TTCCTACTCC ATGAAATTTG GAAATATCCA TTTGTTTGAG        7740

AAAATCCTCA GCCTGTTCAG GTAGAATCAC TGTCAAACCA TGTGGTTTTT GATAATCACT        7800

CGCCATTTTA GCTAAGAATT TGTTGTAAGA AACGCCTGCG GAAGCAGTTA GATGGAGTTC        7860

TTGCCAGATA TCTTTTTGAA TGAGGCGAGC AATTTTGACC GCTGACTTGA TACCGAGTTT        7920

ATTTTCTGTC ACATCCAAAT AGGCTTCGTC AATGCTCATG GGTTCAATCA AATCTGTATA        7980

GCGCTTAAAA ATAGCTCGAA TCTGGAGTCC CACAGACTTG TATTTCTCAT AATTCCCTGA        8040

GATAAAGACA GCCTGGGGAC AACGTTCATA AGCTTCCTTG GAACTCATGG CAGAATGGAC        8100

ACCAAAAGCT CTTGCCTCAT AACTACAGGT AGAAACGACT CCCCGTCCAC CTGTTTGCCG        8160

AGGGTCGCTT CCAATAATGA CAGGTTTTCC TCTGAGTTTA GGATTATCCC TGATTTCCAC        8220
```

483

```
TGCAGCAAAA AAGGCATCCA TGTCAATATG GATGATTTTT CTTGACAAAT CATTTAACAA    8280

AGGAAAAATC AACATGCCTA GCACCTTTTT ATACTCTTCG AAAATCTCTT CAAACCACGT    8340

CAGCTCTATm TGCAACCTCA AAACAGTGTT TTGAGCAATC TGCGGCTAGC TTCCTAGTTT    8400

GCTTTTCGAT TTCCATTGAG TGTTACTGCT TATTyTCTTT TATTATACCC TTTTTTCTGA    8460

AAAAAAGAAA AAAGGACTTT ATTTTTTCAA AAATATAATA CAGTTTGAAA TAAAATATAG    8520

ACTGTTTTAG AAAAGAAAGT GTAAAAATAG GGAATTTTCA CTTGTTGAAA TCGGTTACTA    8580

TATGGTATAC TTGTCTTATG AATGTAACAG ATGACTGTTA CTAGAAAAAA GAGGACATTA    8640

ATATGGTTGT TAAGACAGTT GTTGAAGCAC AAGATATTTT TGACAAAGCT TGGGAAGGCT    8700

TCAAAGGCGT AGATTGGAAA GAAAAAGCAA GTGTATCACG ATTTGTACAA GCTAACTACA    8760

CACCTTATGA TGGAGACGAA AGCTTCCTTG CAGGACCAAC AGAGCGTTCA CTTCACATCA    8820

AGAAAATTGT AGAAGAAACT AAAGCACACT ACGAAGAAAC TCGTTTCCCA ATGGACACTC    8880

GTCCAACATC TATCGCTGAT ATCCCTGCTG GATTTATCGA CAAAGAAAAT GAAGTTATCT    8940

TCGGTATCCA AAACGATGAA CTCTTCAAAT TGAACTTCAT GCCAAAAGGT GGTATCCGTA    9000

TGGCTGAAAC TACTTTGAAA GAAAATGGAT ACGAACCAGA CCCAGCTGTT CACGAAATCT    9060

TCACTAAATA TGTAACAACA GTTAACGACG GTATTTTCCG TGCCTACACT TCAAATATTC    9120

GTCGCGCTCG TCACGCACAC ACTGTAACTG GTCTTCCAGA TGCATACTCA CGCGGACGTA    9180

TCATCGGTGT TTACGCACGT CTTGCTCTTT ACGGTGCAGA CTACTTGATG CAAGAAAAAG    9240

TAAATGACTG GAATGCAATC AAAGAAATCG ATGAAGAAAC AATCCGTCTT CGTGAAGAAG    9300

TAAACCTTCA ATACCAAGCA TTGCAACAAG TTGTTCGCCT GGGTGACCTT TACGGGGGTTG    9360

ATGTTCGCAA ACCAGCGATG AACGTGAAAG AAGCAATCCA ATGGGTTAAC ATTGCTTTCA    9420

TGGCTGTCTG CCGTGTGATT AACGGTGCTC CTACATCTCT AGGTCGTGTA CCAATCGTAT    9480

TGGACATCTT TGCAGAACGT GACCTTGCTC GTGGTACATT TACTGAATCA GAAATCCAAG    9540

AATTCGTTGA TGATTTCGTT ATGAAACTTC GTACAGTTAA ATTTGCTCGT ACAAAAGCTT    9600

ATGACCAATT GTACTCAGGT GACCCAACCT TTATCACAAC TTCTATGGCT GGTATGGGTA    9660

ACGACGGTCG TCACCGTGTT ACTAAGATGG ACTACCGTTT CTTGAACACT CTTGACAACA    9720

TCGGTAACTC ACCAGAACCA AACTTGACAG TTCTTTGGAC TGACAAATTG CCATACAACT    9780

TCCGTCGCTA CTGTATGCAC ATGAGCCACA AACACTCTTC TATCCAATAC GAAGGTGTAA    9840

CAACAATGGC TAAAGACGGA TATGGTGAAA TGAGCTGTAT CTCATGCTGT GTGTCTCCAC    9900

TTGATCCAGA AAATGAAGAA CAACGCCACA ACATCCAGTA CTTCGGTGCT CGTGTAAACG    9960
```

```
                                      484
     TTCTTAAAGC CCTTCTTACT GGTTTGAATG GTGGTTACGA CGATGTTCAC AAAGACTACA    10020

     AAGTATTTGA TATCGAACCA ATCCGTGACG AAGTTCTTGA ATTTGAATCA GTTAAAGCGA    10080

     ACTTTGAAAA ATCTCTTGAC TGGTTGACTG ACACTTACGT AGATGCCTTG AACATCATCC    10140

     ACTACATGAC TGATAGGTAC AACTACGAAG CTGTTCAAAT GGCCTTCTTG CCAACTAAAC    10200

     AACGTGCCAA CATGGGATTC GGTATCTGTG GATTTGCTAA CACTGTTGAT ACATTGTCAG    10260

     CTATCAAATA CGCTACAGTT AAACCAATCC GTGACGAAGA TGGCTACATC TACGATTACG    10320

     AAACAATCGG TGACTACCCA CGCTGGGGTG AAGATGACCC ACGTTCAAAC GAATTGGCAG    10380

     AATGGTTGAT CGAAGCTTAC ACAACTCGTC TACGTAGCCA CAAACTATAC AAAGACGCAG    10440

     AAGCTACAGT ATCACTTTTG ACAATCACAT CTAACGTTGC TTACTCTAAA CAAACTGGTA    10500

     ACTCACCAGT TCACAAAGGT GTATACCTCA ACGAAGATGG TTCTGTGAAC TTGTCTAAAC    10560

     TTGAATTCTT CTCACCAGGT GCTAACCCAT CTAACAAAGC TAAAGGTGGT TGGTTGCAAA    10620

     ACTTGAACTC ACTTTCTAGC CTTGACTTTA GTTATGCAGC TGACGGTATC TCATTGACTA    10680

     CACAAGTATC ACCTCGCGCT CTTGGTAAGA CTCGTGATGA ACAAGTTGAT AACTTGGTAA    10740

     CAATTCTTGA TGGTTACTTC GAAAACGGTG GACAACACGT TAACTTGAAC GTTATGGACT    10800

     TGAACGATGT TTACGAAAAA ATCATGTCAG GCGAAGACGT TATCGTACGT ATCTCTGGAT    10860

     ACTGTGTAAA CACTAAATAC CTCACTCCAG AACAAAAAAC TGAATTGACA CAACGTGTCT    10920

     TCCACGAAGT TCTTTCAATG GATGACGCCT TGGATGCATT GAGCTAATCA AGTTCTTGAA    10980

     TAATAAAAAG GAACCCTCGG TCAAACGACT GAGGGTTTTG TGCTTGGGAT AGTATGAGCA    11040

     ATTCCTTCGG CGCAATATGC AATGTTTTTG GGCTCTTTGT CAACTGTAGT GGGTTGAAAA    11100

     AAAGCTAAGC TTGAGAAAGG ACAAATTTCG TCCTTTCTTT TTTGATGTTC AGGGCGATAA    11160

     AAATCCGTTT TTTGAAGTTT TCAAAGTTCC GAAAACCAAA GGCATTGCGC TTGATGTCTT    11220

     TGATGAGTTT GTTAGTGGCC TCAAGTTTAG CGTTAGAATA AGGCAATTCA ATGGCGTTAG    11280

     TGATGTAGTT TTTATAGCAA ATAAATGTGC TCAAAGTGGT TTTAAAGGTG CGGTTGAGAT    11340

     GAGGTAACGT GTCTTGAATT AAGCCCCAAA ACTGGTCAGT ATTCTTCTCT TGTAGATGAA    11400

     ATAGGAGTAG TTGATACAGG TCATAGTAAT CTTTAAGTTC AGGTACTAGA GTAAAGATTT    11460

     TCTTCAGACA CTCCCTAGGA GTTAAGGTCT CTCTGAAAGT TCTAGCATAG AAAGGCTTAA    11520

     GAGAGAGTTT CCGACTATCT TTTAGGATAA ATTTCCAGTA ATATTTAAGA GCTCTGTATT    11580

     CCAGAGATTT ATCATCAAAT TGCTTCATGA TGTTGATTCT AGTCTGATTA AGAGCCCTGC    11640

     TCATGTGTTG GACAATGTGG AAACGATCGA GAACAATTTT AGCATTGGGA AATAATTTCT    11700

     TAATGAGAGG GATATAACTT CCAGACATAT CAACAGTGAC GACTTTAACT TTTTTTCTAG    11760
```

485

```
CTTCTTTCGA GTACTTGAAG AAATGATTTC GGATGGTTGT TTGACGTCTG TTATCAAGAA    11820

TGGTCATGAT TTTCTTAGTG TTGAAATCCT GAGCAATGAA AGCCAATTTC CCCTTCTGGT    11880

AGGAGAATTC ATCCCAGGAG AGGATTTCAG GCAAAGTGGT GTAATCCTCT TGGAAATGAA    11940

ATTGCTTGAG CTTACGATAG ACGGTAGAGG TAGAGGTAGA GGTAGAGATG GCTAATTTAG    12000

AAGCGATATG TGTAAGAGCC TCTCTGTTGA GTAGGAGTTG GGCAATTTTC TGTCTCACCA    12060

TTTCCGAGAT TTGGCAATTT TTCTGAACGA GAGTTGTTTC AGCTACAGTG ACTTTCCGAC    12120

AGGACTTGCA TTGAAATCGT CTCTTTTTCA AATGAATGAG GCTAGGGAAA CCACCAATCT    12180

CGATAAAAGG GATTTTAGAA GGCTTTTGGA AGTCGTATTT GATTTGTTTT CCTTTACAGT    12240

GTTTACATTT AGGTGGGTGA TAATCAAGTG TAGCGAAGAC TTCGATATGG GTATCGTGCT    12300

GAATGGCTTT ATTTAAGGTG ATGTTTTTGT CTTTTATTCC GATGAGTAAT GTGGTATGAT    12360

TGATGTGTTC CATAAGATAC TTTCTAATGA GTTGTTTAGG CGCTTTTCAT TATAAGTCTT    12420

ATGGGACTTT TTTGATACTC AAAAAGCCCT ATAATCTCCA CAGTGGGATT TACCCACTAC    12480

AGAAATTATA GAGCCAGAAA AAACACTTTT GTTCACTAGC AGAAACTAGA GAGCAGAAGT    12540

GTTTTTCTGT TCAGATTTAC CCAAAACTGG GAAATATGGG GATAAGAATA GAGATGGCTT    12600

AGGAAGCCCC TTTTTGTGTG TAGACAGTAC GATGAACTTA TAACAAATAG TGAGCCTTTT    12660

TAGCAATCAT TGCGACCCGT TTGTCAAAAG CCTCTTTTCG GATATCTACA ATTGTCTGAT    12720

ACATGAGACG CTGTTGGCTA ACATGCAAAT CTAAGGCAAT CGTCAAAAAG TGATGTTTCC    12780

CTTTGGGATA CTGCTTTTTA ACGTAAGGCA GGTATTCTTT CGTTGTAATA ATAATCAATG    12840

GCTCTGTCAA ATGCTCCTCT GAAGGAGGAG GACTAATTAG AATATTGTAT CCTGTAACAG    12900

AGGCAACTTT GTCAGTAAAA TTCCGTAAAA TAATGGACTT TATTAAGTTT ACATCTGCTT    12960

GATTATTTAA AATGATAAAA ATCGGGATAG CAGGTAGTGA GGAAAAGATG GTTTCTGTCA    13020

AGTAGAGTGA GAAAAGGTAC AGCCGATGCT GGTCGATAAC TCCTTCAATC TTCTGCTCAG    13080

TCATCCACTC TTGAACAATT GCTTTCGAAA TATGATACAG TGGCTTGTCG CTTTCAATCC    13140

CATAATGTTC GTAATAATTA TAATAGGGAA CTAGATTTTG TAAACCAAAC AAAAACGTTC    13200

TTGTTAAGAA AGTCAGTGCT GTTAAAAAAG AAAGAGAATT CGAAATGTCA TTTCCTAAGA    13260

TATTCTTGAA CTTGGATAGT AGATGCTTTC CTCTTGTATG CTGAAGAATC AGTTGAATAG    13320

TATGAGTCTT TTTTTCTTGA TTCCATTTGT CCTTGGAAAA CGAAGAATTA GCAGAACAAT    13380

AAACCAAAAA GATATAATCC AGTTCTTCCT GAGTAAAAGT CATGTTGGCA TGTGGCTCTA    13440

AGTAAGTTTG GCAATGTTCC ATCAAAATCG GATACATAAA GAGGTTTTTT AATTTTTCAA    13500
```

486

```
ACTCTTTGGA CTCAGGGAAC TCAAGTGGAA ATTCCCGACG TTTCCAAGTG AGTGCCACTA    13560

GTATGCTAAA ATGAACATAC TCGTCAGGTG TGATTTCTAA CAGTTCATGA CTGAGTTGAG    13620

AATTAGACTG CACAATCATA TGTGTGACCC AATCCATACT TCCATCATTC AAATCATAAA    13680

TCTCAATACC AAAATGAAAC TGGAGGAGTG CAATTAAAAA ACGAATGCGA TATTCAGGAC    13740

CAACTACTTG ATTTTTCACA AGGTCCAAAC CTACTGAACG TAGTAACAAG CCACACTTTT    13800

GTCGTACGCG GTAGCCTGTT GCGATGGAAA TATACTCTTT TTGTGTAAAT TCGTTAAAGC    13860

TTTGATTACC TTGTAGTAGA AAGAAGCGGA GTATTTTTAA AATAGTTGAT TGGTTATAAA    13920

GCTGATGGAA GTAATAATTC GTTTGATGAG AATGGTGTTC GATTAATTGA ACTTGTTGCG    13980

TATCTAAATT AAATGTCAAC TCTTCCTCGA ATGTTTCTTG TAATTCCTGC AAAATGCTTA    14040

GGAGACTTTT AGATTGTAAT GAAGTTAAAG TAGACAGTTC ATCTAGTTCA ATAGACCGAA    14100

TATCCAATAA TATATTTAAA ATGGTAATTT TATCTGTAAT TCTTTTTTCA ATGTATTTGT    14160

TTAGCATAGT TACCGAATCT TAGTTGCATA TAGATAATTT TAATTATTAT AATACAAAAG    14220

AAACTAATTG TCTTGTCAAA AAGGTTGTGG AATTTCCGAC TTTATTGATA AAACAGCATG    14280

TAATAAAAGG CATTTTAAAG ATAGTAATGA GTATTGGTGG AGTTTTATGG CTTATTTTTT    14340

TTATTAGAAA ATATTTTTTT ATCAAATATT GTCGTTCTAT AAAAAAATAT GTGATAAAAA    14400

TATCTATTGT GATGGAAGTT GTTTTAATTT ATACTAGGAT AGTTAATAGT AATACTATAC    14460

TATACTATAT TGTATACAAG TGTGTCATTG CCAGGTTGAG AAGATAGCTA TAACGCACTT    14520

TTATACGCTT TTGCTACGTT TGTTAGTGAA CGGATTAACT CAGTGAGATA AATTTTATCA    14580

GAACATAAGT AATCCGTTTC TTCGTGTATA CAGATTGAAA GTACCTATGA ATCATAGAAG    14640

GATTAACTTG TTCTATGAAT AATGCTTAAC AGGGAGACAC ACATGAAAAA AGTAAGAAAG    14700

ATATTTCAGA AGGCAGTTGC AGGACTGTGC TGTATATCTC AGTTGACAGC TTTTTCTTCG    14760

ATAGTTGCTT TAGCAGAAAC GCCTGAAACC AGTCCAGCGA TAGGAAAAGT AGTGATTAAG    14820

GAGACAGGCG AAGGAGGAGC GCTTCTAGGA GATGCCGTCT TTGAGTTGAA AAACAATACG    14880

GATGGCACAA CTGTTTCGCA AAGGACAGAG GCGCAAACAG GAGAAGCGAT ATTTTCAAAC    14940

ATAAAACCTG GGACATACAC CTTGACAGAA GCCCAACCTC CAGTTGGTTA TAAACCCTCT    15000

ACTAAACAAT GGACTGTTGA AGTTGAGAAG AATGGTCGGA CGACTGTCCA AGGTGAACAG    15060

GTAGAAAATC GAGAAGAGGC TCTATCTGAC CAGTATCCAC AAACAGGGAC TTATCCAGAT    15120

GTTCAAACAC CTTATCAGAT TATTAAGGTA GATGGTTCGG AAAAAAACGG ACAGCACAAG    15180

GCGTTGAATC CGAATCCATA TGAACGTGTG ATTCCAGAAG GTACACTTTC AAAGAGAATT    15240

TATCAAGTGA ATAATTTGGA TGATAACCAA TATGGAATCG AATTGACGGT TAGTGGGAAA    15300
```

487

```
ACAGTGTATG AACAAAAAGA TAAGTCTGTG CCGCTGGATG TCGTTATCTT GCTCGATAAC    15360

TCAAATAGTA TGAGTAACAT TCGAAACAAG AATGCTCGAC GTGCGGAAAG AGCTGGTGAG    15420

GCGACACGTT CTCTTATTGA TAAAATTACA TCTGATTCAG AAAATAGGGT AGCGCTTGTG    15480

ACTTATGCTT CCACTATCTT TGATGGGACC GAGTTTACAG TAGAAAAAGG GGTAGCAGAT    15540

AAAAACGGAA AGCGATTGAA TGATTCTCTT TTTTGGAATT ATGATCAGAC GAGTTTTACA    15600

ACCAATACCA AAGATTATAG TTATTTAAAG CTGACTAATG ATAAGAATGA CATTGTAGAA    15660

TTAAAAAATA AGGTACCTAC CGAGGCAGAA GACCATGATG GAAATAGATT GATGTACCAA    15720

TTCGGTGCCA CTTTTACTCA GAAAGCTTTG ATGAAGGCAG ATGAGATTTT GACACAACAA    15780

GCGAGACAAA ATAGTCAAAA AGTCATTTTC CATATTACGG ATGGTGTCCC AACTATGTCG    15840

TATCCGATTA ATTTTAATCA TGCTACGTTT GCTCCATCAT ATCAAAATCA ACTAAATGCA    15900

TTTTTTAGTA AATCTCCTAA TAAAGATGGA ATACTATTAA GTGATTTTAT TACGCAAGCA    15960

ACTAGTGGAG AACATACAAT TGTACGCGGA GATGGGCAAA GTTACCAGAT GTTTACAGAT    16020

AAGACAGTTT ATGAAAAAGG TGCTCCTGCA GCTTTCCCAG TTAAACCTGA AAAAATATTCT    16080

GAAATGAAGG CGGCTGGTTA TGCAGTTATA GGCGATCCAA TTAATGGTGG ATATATTTGG    16140

CTTAATTGGA GAGAGAGTAT TCTGGCTTAT CCGTTTAATT CTAATACTGC TAAAATTACC    16200

AATCATGGTG ACCCTACAAG ATGGTACTAT AACGGGAATA TTGCTCCTGA TGGGTATGAT    16260

GTCTTTACGG TAGGTATTGG TATTAACGGA GATCCTGGTA CGGATGAAGC AACGGCTACT    16320

AGTTTTATGC AAAGTATTTC TAGTAAACCT GAAAACTATA CCAATGTTAC TGACACGACA    16380

AAAATATTGG AACAGTTGAA TCGTTATTTC CACACCATCG TAACTGAAAA GAAATCAATT    16440

GAGAATGGTA CGATTACAGA TCCGATGGGT GAGTTAATTG ATTTGCAATT GGGCACAGAT    16500

GGAAGATTTG ATCCAGCAGA TTACACTTTA ACTGCAAACG ATGGTAGTCG CTTGGAGAAT    16560

GGACAAGCTG TAGGTGGTCC ACAAAATGAT GGTGGTTTGT TAAAAAATGC AAAAGTGCTC    16620

TATGATACGA CTGAGAAAAG GATTCGTGTA ACAGGTCTGT ACCTTGGAAC GGATGAAAAA    16680

GTTACGTTGA CCTACAATGT TCGTTTGAAT GATGAGTTTG TAAGCAATAA ATTTTATGAT    16740

ACCAATGGTC GAACAACCTT ACATCCTAAG GAAGTAGAAC AGAACACAGT GCGCGACTTC    16800

CCGATTCCTA AGATTCGTGA TGTGCGGAAG TATCCAGAAA TCACAATTTC AAAAGAGAAA    16860

AAACTTGGTG ACATTGAGTT TATTAAGGTC AATAAAAATG ATAAAAAACC ACTGAGAGGT    16920

GCGGTCTTTA GTCTTCAAAA ACAACATCCG GATTATCCAG ATATTTATGG AGCTATTGAT    16980

CAAAATGGCA CTTATCAAAA TGTGAGAACA GGTGAAGATG GTAAGTTGAC CTTTAAAAAT    17040
```

488

```
CTGTCAGATG GGAAATATCG ATTATTTGAA AATTCTGAAC CAGCTGGTTA TAAACCCGTT    17100

CAAAATAAGC CTATCGTTGC CTTCCAAATA GTAAATGGAG AAGTCAGAGA TGTGACTTCA    17160

ATCGTTCCAC AAGATATACC AGCGGGTTAC GAGTTTACGA ATGATAAGCA CTATATTACC    17220

AATGAACCTA TTCCTCCAAA GAGAGAATAT CCTCGAACTG GTGGTATCGG AATGTTGCCA    17280

TTCTATCTGA TAGGTTGCAT GATGATGGGA GGAGTTCTAT TATACACACG GAAACATCCG    17340

TAAAGTGTAG AAATGATAAT ATCTATGTTC TGAACGATAC TTTTAAGAAG TAGCACTCAA    17400

GAAGAGATTT AAGTTTACTT GGTGAAACCT GTTTTATTCG TAAGTAAACT ATCATTGAAA    17460

GGGGAGATGT TTTCGAAAAC TTGCACAGAA AAAGGATTAT TATTGTCATG TGTAATTCAT    17520

TACATTGCTC ACAGTTGATT TTAAGAGATA TGAATAAGGA GAAATCATGA AATCAATCAA    17580

CAAATTTTTA ACAATGCTTG CTGCCTTATT ACTGACAGCG AGTAGCCTGT TTTCAGCTGC    17640

AACAGTTTTT GCGGCTGGGA CGACAACAAC ATCTGTTACC GTTCATAAAC TATTGGCAAC    17700

AGATGGGGAT ATGGATAAAA TTGCAAATGA GTTAGAAACA GGTAACTATG CTGGTAATAA    17760

AGTGGGTGTT CTACCTGCAA ATGCAAAAGA AATTGCCGGT GTTATGTTCG TTTGGACAAA    17820

TACTAATAAT GAAATTATTG ATGAAAATGG CCAAACTCTA GGAGTGAATA TTGATCCACA    17880

AACATTTAAA CTCTCAGGGG CAATGCCGGC AACTGCAATG AAAAAATTAA CAGAAGCTGA    17940

AGGAGCTAAA TTTAACACGG CAAATTTACC AGCTGCTAAG TATAAAATTT ATGAAATTCA    18000

CAGTTTATCA ACTTATGTCG GTGAAGATGG AGCAACCTTA ACAGGTTCTA AAGCAGTTCC    18060

AATTGAAATT GAATTACCAT TGAACGATGT TGTGGATGCG CATGTGTATC CAAAAAATAC    18120

AGAAGCAAAG CCAAAAATTG ATAAAGATTT CAAAGGTAAA GCAAATCCAG ATACACCACG    18180

TGTAGATAAA GATACACCTG TGAACCACCA AGTTGGAGAT GTTGTAGAGT ACGAAATTGT    18240

TACAAAAATT CCAGCACTTG CTAATTATGC AACAGCAAAC TGGAGCGATA GAATGACTGA    18300

AGGTTTGGCA TTCAACAAAG GTACAGTGAA AGTAACTGTT GATGATGTTG CACTTGAAGC    18360

AGGTGATTAT GCTCTAACAG AAGTAGCAAC TGGTTTTGAT TTGAAATTAA CAGATGCTGG    18420

TTTAGCTAAA GTGAATGACC AAAACGCTGA AAAAACTGTG AAAATCACTT ATTCGGCAAC    18480

ATTGAATGAC AAAGCAATTG TAGAAGTACC AGAATCTAAT GATGTAACAT TTAACTATGG    18540

TAATAATCCA GATCACGGGA ATACTCCAAA GCCGAATAAG CCAAATGAAA ACGGCGATTT    18600

GACATTGACC AAGACATGGG TTGATGCTAC AGGTGCACCA ATTCCGGCTG GAGCTGAAGC    18660

AACGTTCGAT TTGGTTAATG CTCAGACTGG TAAAGTTGTA CAAACTGTAA CTTTGACAAC    18720

AGACAAAAAT ACAGTTACTG TTAACGGATT GGATAAAAAT ACAGAATATA AATTCGTTGA    18780

ACGTAGTATA AAAGGGTATT CAGCAGATTA TCAAGAAATC ACTACAGCTG GAGAAATTGC    18840
```

489

```
TGTCAAGAAC TGGAAAGACG AAAATCCAAA ACCACTTGAT CCAACAGAGC CAAAAGTTGT    18900

TACATATGGT AAAAAGTTTG TCAAAGTTAA TGATAAAGAT AATCGTTTAG CTGGGGCAGA    18960

ATTTGTAATT GCAAATGCTG ATAATGCTGG TCAATATTTA GCACGTAAAG CAGATAAAGT    19020

GAGTCAAGAA GAGAAGCAGT TGGTTGTTAC AACAAAGGAT GCTTTAGATA GAGCAGTTGC    19080

TGCTTATAAC GCTCTTACTG CACAACAACA AACTCAGCAA GAAAAAGAGA AAGTTGACAA    19140

AGCTCAAGCT GCTTATAATG CTGCTGTGAT TGCTGCCAAC AATGCATTTG AATGGGTGGC    19200

AGATAAGGAC AATGAAAATG TTGTGAAATT AGTTTCTGAT GCACAAGGTC GCTTTGAAAT    19260

TACAGGCCTT CTTGCAGGTA CATATTACTT AGAAGAAACA AAACAGCCTG CTGGTTATGC    19320

ATTACTAACT AGCCGTCAGA AATTTGAAGT CACTGCAACT TCTTATTCAG CGACTGGACA    19380

AGGCATTGAG TATACTGCTG GTTCAGGTAA AGATGACGCT ACAAAAGTAG TCAACAAAAA    19440

AATCACTATC CCACAAACGG GTGGTATTGG TACAATTATC TTTGCTGTAG CGGGGGGCTGC    19500

GATTATGGGT ATTGCAGTGT ACGCATATGT TAAAAACAAC AAAGATGAGG ATCAACTTGC    19560

TTAAGTAAGA GAGAAAGGAG CCATTGATGA CAATGCAGAA AATGCAGAAA ATGATTAGTC    19620

GTATCTTCTT TGTTATGGCT CTGTGTTTTT CTCTTGTATG GGGTGCACAT GCAGTCCAAG    19680

CGCAAGAAGA TCACACGTTG GTCTTGCAAT TGGAGAACTA TCAGGAGGTG GTTAGTCAAT    19740

TGCCATCTCG TGATGGTCAT CGGTTGCAAG TATGGAAGTT GGATGATTCG TATTCCTATG    19800

ATGATCGGGT GCAAATTGTA AGAGACTTGC ATTCGTGGGA TGAGAATAAA CTTTCTTCTT    19860

TCAAAAAGAC TTCGTTTGAG ATGACCTTCC TTGAGAATCA GATTGAAGTA TCTCATATTC    19920

CAAATGGTCT TTACTATGTT CGCTCTATTA TCCAGACGGA TGCGGTTTCT TATCCAGCTG    19980

AATTTCTTTT TGAAATGACA GATCAAACGG TAGAGCCTTT GGTCATTGTA GCGAAAAAAA    20040

CAGATACAAT GACAACAAAG GTGAAGCTGA TAAAGGTGGA TCAAGACCAC AATCGCTTGG    20100

AGGGTGTCGG CTTTAAATTG GTATCAGTAG CAAGAGATGT TTCTGAAAAA GAGGTTCCCT    20160

TGATTGGAGA ATACCGTTAC AGTTCTTCTG GTCAAGTAGG GAGAACTCTC TATACTGATA    20220

AAAATGGAGA GATTTTTGTG ACAAATCTTC CTCTTGGGAA CTATCGTTTC AAGGAGGTGG    20280

AGCCACTGGC AGGCTATGCT GTTACGACGC TGGATACGGA TGTCCAGCTG GTAGATCATC    20340

AGCTGGTGAC GATTACGGTT GTCAATCAGA AATTACCACG TGGCAATGTT GACTTTATGA    20400

AGGTGGATGG TCGGACCAAT ACCTCTCTTC AAGGGGCAAT GTTCAAAGTC ATGAAAGAAG    20460

AAAGCGGACA CTATACTCCT GTTCTTCAAA ATGGTAAGGA AGTAGTTGTA ACATCAGGGA    20520

AAGATGGTCG TTTCCGAGTG GAAGGTCTAG AGTATGGGAC ATACTATTTA TGGGAGCTCC    20580
```

490

```
AAGCTCCAAC TGGTTATGTT CAATTAACAT CGCCTGTTTC CTTTACAATC GGGAAAGATA     20640

CTCGTAAGGA ACTGGTAACA GTGGTTAAAA ATAACAAGCG ACCACGGATT GATGTGCCAG     20700

ATACAGGGGA AGAAACCCTT GTATATCTTG ATGCTTGTTG CCATTTTGTT GTTTGGTAGT     20760

GGTTATTGTC TTACGAAAAA ACCAAATAAC TGATATTCAA TGTACATCAT TATGAATAGG     20820

ATAGCAGGCT GAAGGGAAGA CCAGAGTACT CTGAGGTGAT GTTAATCAGG AATCATGGTG     20880

ATGTGGCATG AATCATCAAT AACGGATATG AGGCTGGGCA GATTGTGCCA GCCTCATTGT     20940

GGGTTATTGT TTGTAAAACG ATAGGACTGG TCTGGTAATC ATTTTA                     20986
```

(2) INFORMATION FOR SEQ ID NO: 55:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 21040 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

```
CCCAGCAAAA AGCCATCCGA AGATGACTTT TTTGCTATTT AATTTCTGTA TAAGTTACTT        60

CCAAGCCACG CTTAACAGCT GGACGATTGG CAATTTTTTC TGCCCATTTT ACTAGATTTT       120

GATAACTTGA GGCATCCAAG AATTTTGCAG AACCTTGGTA AAGATTTCCT TGAACTAACT       180

GTCCATACCA AGACCAGATA GCAATATCTG CAATCGTATA GTCATTGCCT GCAATATAAG       240

GTTTCTGAGC CAATTCCTTA TCCAATAAAT CCAACTGGCG TTTCACTTCC ATCGTAAAAC       300

GGTTAATAGG ATATTCCAAT TTTTCAGGAG CATAATTGAA GAAATGTCCA AATCCCCCAC       360

CTAGAAAAGG TGCTGCACCT GCTTGCCAGA ATAGCCAATT CAAAACTTCT ACCTTTTCCA       420

CAGGATTACT TGGTAAAAAG GCTCCAAATT TCTCAGCAAG GTAAAGAAGA ATATGAGCAG       480

ACTCAAAGAC TCTTACGTTT TCAGTACCTG ACTGGTCCAA TAAGGCTGGA ATCTTGGAAT       540

TTGGATTGAG CTTCACAAAG TCTGATCCGA ATTGATCCCC ATCCATGATA GCAATCTTAT       600

ACAAGTCGTA AGCCGCTTCC TTAAAACCAG CTTCTAGTAA TTCTTCCAAT AAGATAGTAA       660

CCTTCACACC ATTTGGTGTT CCCAGTGAAT AAAGCTGAAA AGCTTGTTCT CCTTTTGGCA       720

AGTTTTGTTC GAAACGGGCA CCTGCTGTTG GTCTGTTTAG CCCCGTAAAA GCTCCTTGAT       780

TACTAGCTTC ATCCTGCCAT ACGGTCGGTA ATTGATATGC TGACATCCGA AACCTCCCTT       840

AAATCGCATT CTTGTCAAAA CCGAGTTTGC GTTGAATAAA CTTAACGATT TCGACGATGA       900

TAATCATTGA GAAGCTTCCA GCCATAACAA TTCCCCATTG TGACAAGTCT AGTTTGGTTA       960

CGTGGAAGAT TCCTTCAAGC GGTTCTACAA CGATTGTTGC CATGAGAAGG ATAAAGGATA      1020
```

491

```
CCAAGATGGA CCAGTTAAAG GTCTTAGACT TGAATGGGCC AACTGTCAAG ATGGATTGGT     1080

AGACAGACTT GACATTGTAG GCATGGAAGA GCTGAATCAA ACCAAGGGTT GCAAAGGCCA     1140

TCGTTAGGGC ATCTGCATGA ATAGCATGAT TGTCACCCAC ATGAACTGGG TAAGCAATCG     1200

CAAGGCCATA AACACTCATA ACAAGAGCTG CTTGGAGTAC ACCTTGATAA ATGATAGAAC     1260

TCAAAACACC ACCTGAGAAG AAGCTTGCCT TGCGTCCACG TGGTTTATGA TTCATGACAC     1320

CAGGTTCCGC AGGTTCAACA CCAAGAGCGA TAGCTGGGAA GGTATCCGTT ACCAAGTTGA     1380

TCCACAAAAG ATGAACCGGC TGTAAGACAT CCCAACCAAA CAAGGTTGAT AGGAAGATGG     1440

TTAATACTTC AGCAGTATTA GCAGAAAGTA GGTACTGAAT AGTCTTTTGA ATGTTTGAGA     1500

AGACCTTACG TCCTTCTTCC ACTGCGACGA TAATAGTCGC AAAGTTATCA TCTGCAAGAA     1560

TCATATCAGA AGCCCCCTTA GAAACCTCTG TACCAGTGAT TCCCATACCG ATACCGATAT     1620

CGGCTGTTTT CAGAGCTGGC GCGTCATTGA CACCGTCACC TGTCATGGCA ACGACTTTAC     1680

CTTGTTTTTG CCAAGCCTTG ACGATACGAA CCTTGTGTTC TGGAGACACA CGGGCATAAA     1740

CAGAGTATTG ACCAACGACT TTTTCAAATT CTTCATCTGA CAGTTCATTG AGTTCAGCAC     1800

CAGTTAAAAC GTGACCTTCT GTATCGTTTG CGTCAATGAT TCCCAAACGT TTGGCAATGG     1860

CTTCCGCTGT GTCTTGGTGG TCACCTGTAA TCATAATTGG ACGGATTCCC GCTTCCTTAG     1920

CCACACGAAC AGCCTCAGCG GCTTCAGGAC GTTCAGGGTC AATCATCCCA ATCAAACCAG     1980

TAAAAATTAA ATCATTTTCA AGCTCTTCAG AAGTGAGATT TTCTGGAATA CTATCGATAA     2040

TCTTATAAGC ACCTGCAAGG ACACGCAAGG CTTGATGAGC CATTTCAGAA TTGTTTGTAC     2100

GAATGAGATT TGTAACCTTC TCATCAATCG GAGCAATATC CCCAGCCTTA TCACGAAGAA     2160

GACAACGTTT TAAGAGTTGG TCTGGCGCAC CCTTGACTGC TACAAGGAAA CGACCATCTG     2220

GCAATGGGTG AACTGTTGAC ATGAGCTTAC GGTCAGAGTC AAATGGCAAT TCAGCTACAC     2280

GAGGATATTT CTCTAAGAAA CCTTTGACAT CATAGCCCTT GTCCAAGGCA TATTGGATAA     2340

AGGCTGTTTC GGTTGGGTCA CCAATCAAGT TACCTTCCAC ATCGATTTTC GTATCATTGG     2400

CCAAGACAAC TGAACGAAGT AGTGGCATTT CAAGACCTAG TTCAATATCA TCAGCTGAGT     2460

CATGTAGAAC CGCATCGTAG AAGACTTTTT CGACTGTCAT CTTGTTCATA GTCAGCGTAC     2520

CAGTCTTATC AGAAGCGATG ATTTCAGTTG AACCAAGTGT TTCAACTGCT GGCAACTTAC     2580

GAACGATGGA ATGTCGTTTG GCCAAAACTT GAGTACCAAG AGAAAGAACG ATGGTAACGA     2640

TAGCAGGAAG TCCTTCTGGA ATGGCTGCAA CGGCAAGGGC AACAGAAGTC AACAACTCAC     2700

CAAGTGGATT TTTCCCTTGA ATGAAGACAC CCACTACAAA AGTAACAAGG GCAATGACCA     2760
```

492

```
AGATAGCATA GGTCAAGACC TTAGAAAGGT TGTTCAAATT TTGTTTGAGT GGTGTATCAG     2820

TCTCATCCGC ATCTTGAAGC ATACCAGCAA TATGACCAAC TTCAGTGTAC ATACCTGTAT     2880

TGACAACAAC ACCCATCCCA CGACCATAGG TTACGTTTGA GTTTTGGAAG GCCATGTTGA     2940

CACGGTCACC AATACCAGCA TCTGTCGCAA GCTCGACTGA CAAGTCTTTT TCGACTGGTA     3000

CAGATTCACC TGTCAAGGCT GCTTCTTCAA TTTTAAGAGA GTTGGCTTCT ATCAAACGTA     3060

GGTCCGCTGG TACCACGTCA CCTGCTTCAA GGGCAACGAT ATCGCCTGGT ACCAATTCTT     3120

TAGAGTCAAT CTCTGCCATG TGTCCATCAC GAAGAACGCG GGCAACTGGA CTAGACATGG     3180

ATTTGAGGGC TTCAATAGCT TCTTCAGCTT TTCCTTCTTG GTAAACACCA AAGGCAGCGT     3240

TGATGATAAC CACAGCTAGG ATGATAATGG CATCTGCGAT ATCTTCCCCA CCAGAAGTCA     3300

CGACTGACAA GATTGctGCC GCAACTAGGA TGATAATCAT CAAATCCTTA AATTGCTCGA     3360

TGAATTTGAC CAAGATTGAT CGTTTCTCGC CTTCTTCGAG TTCATTGTGC CCAAATTCGG     3420

CAAGGCGCTT TTCCGCCTCA CTTGATGACA AACCTTGCTC GGTCGCATCC ACAGCCTGCA     3480

AGACCTCTTC AGGGCTCTGA GTATAAAACG CTTGGCGTTT TTGTTCTTTT GACATGTGTC     3540

TCCTCCTTGA CATTGTGTGC AAAACAGACT CTCTTTCTGT CATAGCTTTT CACGACAAAC     3600

AAAAAGAAAC CTGTTAATCA TAACAAGTCT CGCTGTTTAA GATAGGGCCG GAAAGCATAC     3660

TTTTCAGCAT AAAATTCGGA ATGACGACAC TATCACAGGT TTCTGCCAGC TACTCCCTTG     3720

AGTAGTACCA TTATACCAAA TTTTGGGGAG TTTTCAAAGA GTAAAAACTG CCTTATTTGA     3780

ATTTTTCCTT GAAAACCAGT ATAATGGTAG AATGCTATGT GACTAGAAAG GAAGTTGAAT     3840

GAAGCAATCT ATCTCAAATC TCAAGTTAGC TGAGCGTGGA GCCATTATCA GTATTTCGAC     3900

CTATTTGATC TTGTCTGCAG CCAAATTAGC AGCTGGTCAT CTCCtTCATT CATCCAGTTT     3960

GGTGGCCGAT GGTTTTAATA ACGTATCGGA CATCATTGGA AATGTGGCCC TCTTAATCGG     4020

GATTCGGATG GCGCGCCACC TGCAGACCGT GACCACCGTT TTGGTCATTG GAAGATTGAA     4080

GATTTGGCAA GCTTGATCAC TTCTATCATC ATGTTCTATG TCGGTTTCGA TGTTCTAAGA     4140

GATACCATTC AAAAGATTCT CAGTCGGGAA GAAACGGTCA TTGATCCTCT TGGTGCAACT     4200

CTAGGAATCA TTTCTGCAGC GATTATGTTT GTGGTCTATC TCTACAATAC TCGCCTCAGT     4260

AAGAAATCCA ACTCCAATGC GCTGAAGGCA GCTGCTAAGG ACAATCTTTC TGACGCTGTT     4320

ACCTCACTTG GAACCGCCAT TGCCATCCTA GCTAGTAGTT TCAATTATCC GATTGTGGAT     4380

AAACTGGTTG CTATCATCAT CACTTTCTTT ATCTTGAAGA CTGCCTATGA TATCTTCATC     4440

GAGTCTTCCT TTAGTCTTTC AGATGGCTTT GACGACCGCC TGCTCGAGGA CTACCAAAAG     4500

GCTATCATGG AAATTCCCAA AATCAGCAAG GTCAAATCGC AAAGAGGTCG CACCTACGGT     4560
```

493

```
AGCAACATCT ACCTGGATAT TACACTAGAG ATGAATCCTG ACTTGTCTGT TTTTGAAAGC    4620

CATGAAATCG CGGATCAGGT CGAGTCTATG CTGGAGGAGC GTTTTGGCGT CTTTGATACC    4680

GATGTCCATA TCGAACCAGC ACCTATCCCT GAGGATGAAA TTTTAGACAA TGTCTATAAA    4740

AAATTGCTTA TGCGTGAACA ATTGATTGAC CAAGGAAACC AACTAGAAGA ACTCTTGACT    4800

GATGATTTTG TCTATATTCG CCAAGATGGA GAGCAGATGG ATAAAGAGGC TTATAAGACC    4860

AAAAAAGAGT TAAATTCTGC TATCAAGGAC ATTCAAATTA CTTCCATCAG TCAAAAAACC    4920

AAACTCATCT GCTATGAGTT AGATGGTATC ATCCATACCA GTATCTGGCG TCGCCACGAA    4980

ACCTGGCAAA ATATCTTTCA TCAAGAAACC AAAAAAGAAT AGAGAAATCC TTTCATGAGA    5040

CGGGATTTTT CTATTCTTTT ATACTCAATA AAAATCAAAG TGCAAATTAG GAAGCCGGTC    5100

ACAGGCTGTA CTTGAGTCGG CAATGTGAAG CCGACATAGT TTGCACTTTG ATTTTCGAAT    5160

AGTCTTAACT ATCAAATTCA CTGAGATACT CATAGCGTTC GTATTTTTCA AGGAGTGCTT    5220

CATTTTTCTC ATCCAATTCT TTTTGGAGAG TAGCCAGCTT ACCAAAGTCA GAGCCGTTAG    5280

CCTGCATTTC CTCTTCAATA GCAGCGATAC GTTTTTCCAA GGTTTCAATA TCACCTTCAA    5340

TACTTGCCCA CTCCTGCTTT TCTTGGTAGG TCATGCGTTT CTTGTCTTCT CGAACCTTGA    5400

CCACTTTTTC CTTTTCGGCC TTTTGCACTT GATTGGCCAT ATCTGTTTCA AAAGCTTTTT    5460

CATCAAGATA GTCGGTGTAA TGACCAAAGA AAGGACGAAT CTTGCCATCC TCAAAAGCGA    5520

GAATCTTGGT CGCTACCTTA TCCAAGAAAT AGCGGTCGTG ACTGACTGTT AAAACGGGAC    5580

CTGCAAAACC TTGCAAGAAA TTCTCTAAGA CTGTCAAAGT TGCAATATCT AGGTCATTGG    5640

TTGGCTCGTC TAAAAGAAGA ACATTTGGTT TTTCCAAAAG CAGTTTGAGG AGATAAAGAC    5700

GTTTTTTCTC ACCCCCTGAC AATTTCTCAA TCAAAGTCCC ATGCGTCGAA CGTGGGAAGA    5760

GGAATTGCTC CAGCAACTCA GCGATGGAAG TCGTAGAACC ACCACTGGTC TTGACCTCCT    5820

CTGCCACTTC CTGCAGGTAA TTGATCACAC GCTTGCTTTC ATCCAAACCC TCAATTTGTT    5880

GAGAGAAATA GGCGATGCGA ACAGTTTCCC CAATCACAAC TTGTCCTGCT GTCGGCTCAA    5940

GACTTCCTGC AATCAGGTTA AGTAGGGTTG ATTTTCCAAC ACCATTGTCC CCAACAATTC    6000

CAATACGGTC TTTAGCCTGA ACTAAGAGAT TAAAATTTTG CAAAATGGGC TTATTTTCAT    6060

AGGCAAAGGA AACATCCTGA AACTCGATGA CTTTCTTCCC AATCCGACTG GTTTCAAAGT    6120

TCATAGTCAA GTCTGTCTCA GCACTACTGC CTGAAACTTC CTTTTTCAGA TCATGGAAAC    6180

GATTGATACG AGCTTGTTGC TTGGTCGCAC GCGCCTGCGG TTGTCTGCGC ATCCAGGCCA    6240

ATTCTTGTTT GTAGAGTTGT TCTTTTTTGT GAAGAAGAGC CGCGTCGCGC TCATCCTGTT    6300
```

494

```
CCGCCTTTAG GCGAACATAG TCCTGGTAAT TTCCCTGGTA CTCGGTCAAG CCTGCACGAT    6360

CCAACTCGAA AATCCGTGTT GACAAAGCGT CTAAGAAATA ACGATCGTGA GTGATAAAAA    6420

GGACGGTCTT CTTAGAATTT TTCAAAAAGA GGGTCAGCCA CTCAATAATC GCAATATCCA    6480

GATGGTTGGT CGGCTCATCC AAAAGCAAGA GGTCGTGGTT GCCAAGTAAG ACTTGTGCCA    6540

ACTGTACCCG TCTTCTCAGA CCACCTGACA ATTCCCCAAC AGGAGTAGAT AAGTCTTGAA    6600

TGCCCAATTT GCTAAGAACG GTCTTGACCT GACTTTCGAT TTCCCAAGCT TGGAGAGAGT    6660

CCATCTCTGC CATGACACGT TCCAAACGCG CCTGCTTGTC CTCACTATAG TCGAGCATAA    6720

TCAATTCATA CTCACGAATG AGCTGGATTT CCTTGAGTTC ACTAGATAGA ACCGTATCCA    6780

AAACTGTCTT TCTATCATCA AAATCAGGAT CCTGAGTCAA GTAACCAATC TGGTAATCAT    6840

TTTTAGCTGA AAAAGGACTG ACATCCCCAT CAAATCCAGA AACACCAGAA AGGACGTCCA    6900

AAAGGGTGGT CTTGCCAGTC CCATTGACAC CGATTAAACC AATTCTGTCT AAGTCATGGA    6960

TAATAAAGGA AATATCCCTA AAAACGGTCT TGTCACCAAC GGATTTACTT AGTTTTTCAA    7020

CGATAAAATC ACTCATTTTT TCTCCCTCAG GTAAGCATGG ATGGCTTCAC GATTATTCTC    7080

CAATTCTCCA TCGACAATGG CAAACTCAAT CTCTGTTAAA ATCTCTCCCA AGTCTGGGCC    7140

TGGCTGATAG CCATATTCCT TGATCAAAAT ACCGCCATTA ATCTGAATCT CTTTCTTGTC    7200

ATGGATAGTC AAGCTTTGGT ATTTTTCTGT GATGGCTTGT GGGTTGACTT CTTTTCCTTG    7260

AGCTTGACGA AGATTTTCAG CCTGTAAAAG CAAATCTATG TCAAAGCGAT AACAATCTCG    7320

CTTGCTCAAT TCTCCATTTT CACGCAGAGC CAAAATAATC AGCAAATCCT GAACTTGCTT    7380

GGCAAACTGG CGTGAGGTCT TCCAAGATTT CAAAAATGAC TGCGCATTTT CAATCTCCAA    7440

AGCCCATAGT AAAGCCGCCC AGGCTTGTTC AGAGGATTCA AAAGTAAAAT CAGTCTCCAA    7500

ATCAAACAGT CTGTTGAGCT TGTCCTGGCT AGATGCCATA TCAGGGAGAT AGTCATAAGC    7560

TTGACTCTCA ATCATGGAAG CCAAGCCCCT TCTCCAAAAT GGAGCCAGCA AGAGTTTATC    7620

AAACTCGACG AAGGTACGCT CTACAGAAAT TTTCTCCAAA AGCGGCGTCA AGGTCTTCAT    7680

AGCTTTAAAT GTTTCTGGCT CAAGTGCAAA ACCAAGACTA GCCTGAAAAC GGAAACCACG    7740

CATAATCCGT AAAGCATCTT CGTTGAAACG CTCACTAGCC ACTCCAACTG CTCGCAAGAC    7800

TTGCTTTTCC AAATCTTCTA AACCATGGAA CAAGTCAACG ATTTCTCCTG TCTCATCCAA    7860

GGCAAAGGCG TTGACTGTGA AATCACGGCG TTTGAGGTCT TCTTCTAGCG ATCGTACAAA    7920

GGAAACCGCA CTGGGTCTGC GATAGTCCAC ATAGACATCC TCTGTCCGAA AGGTTGTTAC    7980

CTCATACTCC TCATCCCCAT CTAAGACCAA GACGGTTCCA TGCTCGATTC CGATATCGGC    8040

TGTTCGCGGA AAAATCTGCT TGGTCTCTTC TGGATAAGAA GACGTCGCAA TATCCACATC    8100
```

495

```
GTGGATAGGG CTATGGAGAA GGGCATCTCG AACAGAGCCC CCAACAAAAT AAGCCTCAAA    8160

GCCTGCTTCT TTAATTTTTT CTAATACTGG TAAAGCCTTC TGAAATTCAG AAGGCATTTG    8220

CGTTAATCTC ATAATAAGTG TTCTAATCCA TAGACAAGCT CATGACGCTT GACAACTTCT    8280

TTAATTCCCA AATTGACTCC TGTCATGAAG GAGATGCGAT CATAGGAGTC ATGACGGAGG    8340

GTCAACCCTT CTCCCTGATT GCCAAAGATG ACTTCCTGAT GAGCTACCAA GCCTGGCAAA    8400

CGAACTGAGT GGATGCGCAT ACCATCAAAG TCAGCACCAC GAGCACCAGC AATCAGCTCT    8460

TCCTCATCTG CTGCACCTTG CTGAATTGAC TCTCGAACCT CTGCCATCAA CTCAGCTGTT    8520

TTAATGGCTG TTCCACTCGG AGCATCCTTT TTCTTGTCAT GATGGAGCTC AATAATCTCC    8580

ACATTTGGGA AATATTTGGC AGCCTGCGTC GCAAATTGCA TGAGTAAGAC AGCACCCAAG    8640

GCAAAGTTAG GGGCAATCAG GCCACCCAAG TCTTGGGCAC GAGAAAATTC TTTTAGCTCT    8700

GCAATTTCTT CACTCGTGAA ACCAGTCGTT CCAACTACTG GAGCAAAGCC ATTTTCAAGA    8760

GCAAAACGTG TATTTTCGTA GGCAACAGCT GGAGTAGTAA AATCTACCCA GACATCCGCT    8820

TCAAAACCAG CTAAATCAGC CTTATCCTTG AAAACAGGAA TACCCTGCCA TTCTGACTCA    8880

GACTCAAAAG GATCCAAAAC TGCCACCAAG TCCAAGTCTG GATCAGTCAA TACCATCTGA    8940

CAAGCAGCCT GGCCCATCTT TCCCTTAAAA CCGGCAATAA TTACTCGAAT ACTCATCTCT    9000

ACTCCTGTCT AAGATACAAA GTCCGTAAGA ACACAAAGTG AAAATAGGAA TTCCAATCAA    9060

GAAGTGTCTA CTTCTTGGAA GAACTATCTT TTTCACACAG GGTTCCAGGC GTGTTCAATT    9120

ATCAAGATAC AAAGGACCTT AGCTGCCTCT GAAAAATAGG GAATGGCACT GACTTTCCAC    9180

GAAAGGCAAG ACAGGCATCT TTTTTCAAGA GGCAGGTAGT CCGTGTTCAA TTTCTAAGAT    9240

ACAAGGCATC TTAACTAGCC TAGAAGCGCC AACTAAATCA CTGGAATATA ACCCAGAGCA    9300

ATACTTCCTG CTCCTAGGTG CGTTCCAATG ACACTACCAA ATGTAGCAAG TGAAACATCC    9360

GAACCCAAGC CAAAATCAAG CAAGTGcTGA CGCAATTCTT CAGCCTTTTC AGGAGCATTC    9420

CCATGAATGA CAATGACCCG GTATTGACCT GAAGCCGTTG TTTCCTTGAT AATTTCAATT    9480

AAGCGCTTGG TGGCCTTCTT TTCAGTACGA ACTTTTTCGT AAACTTCAAT CACACCTTGA    9540

TCGTTAAAAT AAAGGATTGG CTTAATGCTA AGCAAATTGC CCAAAATGGC AGCCCCATTT    9600

GAAAGGCGTC CACCTTTTAC CAAATGATCC AAGTCATCTA CCATGATAAA GGCTGACGTA    9660

CGGCTGATTT GAATGGCTAG CTTATCCTGA ATGCTGGCAA AATCATCGCC CTGATCACGC    9720

CAATTAAAGA CGCTTTCAAC CATGATGCCT AGGGGAGCAC TTGTAATCAA AGTGTCTGGG    9780

AAAGCAATGG TTAAGCCCTC ATAGTCATCG ACCATATACT GGATATTTTG GTAAAAACCT    9840
```

496

```
GAAATTCCAG AAGATAGGAA AAGCCCCAAG GCATGTGTAT AGCCTTGTTC TTTGAGCGAA      9900

GTTAAGATCT CATCTAACTT GGCAATACTT GGTTGACTGG TCTTAGGCAA TTCAGAAGCC      9960

TGAGCCATTT TTTGGTAAAA TTCCTCAGCA GACAGATTGA TGCCTTCGAC ATATTCCTCA     10020

CCATCAATAT TGACAGGAAT ATCCAAGACA AACAAGTCTT CTCTTTGCAA GATCTCTGCA     10080

CTGAGATAAG CAGAGGAATC TGTGAAAACA GCTAATTTCA TATTAGAACT CCAAATTAAT     10140

TCCTGGTAAG TCTAATGCAA TTTCAGTCAC TTCGTAAGTC AAACGATTGA GCATGTTCAA     10200

ACATGGACGA GCCAAGGTTT CCACCTCTTC TTGGTTCAAT TCACTTGGTT CATTGACAAT     10260

ACGGCCATCG ATATGGTTTA CTTGTGAGAT TGTTCCACTA ATGACAAACT TATCAAATAC     10320

AATCATAAAG CTCAAGATGA CAATCAAGGA AGTCACTTGA TTTTCTTGGT CATGTTGGAG     10380

CAATTGGAAA TTCACATCCA CCTTGGTTTC AGGAGCTCCA TTTTCATTTT CCCATTCAAA     10440

ATTACGCGCA TCAAAATGAT ACTGACTAAC AAATTCTTGT TCACGTTTAA GATTCATGTC     10500

TTTCTCCATC GGCTACAATA TTATAAGCTA TTGTACCATA ATTTTTTATT TTCATCTAGT     10560

TTTCTAGGAT TTAGTCAATC CCAATTTCAG CACGAACTAC ATCTGTGATG GTATCAACAT     10620

AGTAGTTTAC TTCTTCTGTT GTAGGCGCTT CTGCCATAAC ACGCAAGAGG GGTTCTGTTC     10680

CACTTGGACG AACAAGGATA CGGCCGTTCC CCGCCATTTC TTCTTCCATC TTCTCGATGA     10740

TGGCCTTGAT AGCTGGCACT TCCATGGCCT TTTCCTTCAT GACGTTTTCC ACTCGGATAT     10800

TAACTAATTT TTGTGGATAA ATCGTTACTT CTGCCGCCAA CTCTGATAAG CTCTTACCAG     10860

TTTCCTTCAT GATTTTAGTC AATTGAACTG CTGATAATTG ACCATCACCT GTGGTATTGT     10920

AATCCATCAA GATAACGTGA CCAGACTGTT CACCACCAAG GTTGTAGCCT GATTTTCTCA     10980

TTTCTTCAAC AACGTAGCGG TCACCAACTG CAGTAACTGC CTTGTTAATA CCTTCGCGAT     11040

TCAAGGCCTT GTGGAAACCA AGGTTAGACA TAACAGTTGT CACAATTGTA TTTTGAGCCA     11100

ATTGTCCTTT TTCAGAAAGG TATTTTCCGA TGATGTACAT AATCTTGTCA CCATCAACGA     11160

TGTCACCATT CTCATCAACA GCAATCAAGC GGTCACTGTC TCCATCAAAG GCCAAACCAA     11220

TAGCTGACCC ACTTTCTTTG ACCACTTCTT GAAGGGCTTC TGGATGTGTT GAACCAACAT     11280

TAAGGTTGAT GTTAAGACCG TCTGGTGTTT CCCCGATAAC CGTCAATTGG GCACCAAGGT     11340

CTGCAAAGAT TTGACGGGCA CTGGTAGAAG CTGCTCCATT AGCTGTATCC AAGGCAACCT     11400

TCATTCCATC AAGAGGAGTT CCAGTTGAAA CAAGGTATCC TTCATACTTA CGCArGCtTC     11460

TGGATAATCT ACCAAAATTC CTAAGCCTTC TGCACTTGGA CGAGGAAGAG TGTCTTCCTC     11520

AGCATCTAGC AAGGCTTCAA TTTCTGCTTC TTTTTCATCA TCTAGTTTGA AGCCATCACC     11580

GCCAAAGAAC TTGATTCCGT TATCAAGGGC TGGGTTGTGG CTAGCAGAAA TCATGACACC     11640
```

497

```
GGCACTTGCT CCTTCAGTTT CAACCAAGTA AGCTACTGCT GGTGTTGCAA GGACACCAAG    11700

TTTGTATACG TGAATCCCTA CTGAAAgGAG ACCTGCCACC AAGGCCGATT CCAACATTTC    11760

CCCTGAAATA CGTGTGTCAC GTCCTACAAA GACTTTCGGC GCTTCCGTTT CATGTTGACT    11820

AAGAACATAG CCTCCAAAAC GTCCTAGTTT AAAGGCTAAT TCTGGTGTTA GTTCTAGGTT    11880

AGCTTCTCCA CGGACTCCAT CAGTCCCAAA ATATTTACCC ATTGTTATAA AATCCTTTTC    11940

TATTTTTAAT TCGTTTTTGA ACTAGTTGCT TTCGTTGACG AAGATGTCTC CGATGAACTG    12000

CTTGTACTTG AATTTGATGT GCTTGAACTT GGTGCTACTG GTTTTGTAGT CACCTTCATT    12060

ATTGTATCAA ACGGAGTGAT AACTGCCGGT AAGACAACAC CATTGCGGTC GATTGCCTGC    12120

AAAGGTACTG AACCACTGTA ATTACCTGTT ATACGTTCGC TAGTTGGCAA AACAGCGATA    12180

ATCTTATCAA TTCTATCCAA TGTCTCTTGG TCACTCGTAA TAGACACTTC TTTATCTGAC    12240

ACCATGACAT TTTCAATTTG TACCCGACTA TCAATTTGAC TAGGGTCAAT CTCTGGTACA    12300

ATCTTTACCT TATCCTTCTG AGCCTTCTTA CCAATCTTGA CTGTAATTTT TTGCGGAGTC    12360

GCCACAGCGG TCAGCCCATT GGGTAAATCT TCAATGCTCA AAGGAACTTC AATCGTTCCA    12420

ACACCGGCAT CTGTTAGGTC AGCAGTAACC TTGAATTTAC GTGTACTTTC TTGCATTTCA    12480

CTAGCTAGCG ATAGGCGATT TGCACCAGTC AAGACCACTG ATACTTCTGA AGCAAAACCG    12540

CTAATAAAAT ACTTATCACT ATTATAGCGT ATGTCAATAG GGACATTTGT TACTGTATTA    12600

GTATAGCTTT CCGTTTTTAC CTGCCTAGCA CTGGTACTGT TTTGAAAATT CGTCGCCGTA    12660

GCATAGACAA ATAAGACACA AGCAAAAAAG AGTGAGGATA TGATATATAA ACTATTTTTT    12720

TTCATGTTTC CATCCTCCTA GCAATCGTTC TTTAAAACTA AGACCCACTT CCTCTTTTGG    12780

AAGTAAGATT TCACGTAATT CTGTTTCAAA TTCATCAAGT GTTAGGTTGT GCTTAAACCT    12840

TCCATTATAG GTTATCGAAA TTCCTCCCGT TTCCTCTGAT ACGACAAAAG TCAAGGCATC    12900

TGAGACTTCT GATAAACCGA TAGCCGCCCG GTGTCTGGTC CCAAATTCCT TGGAAATCCC    12960

TGTGTTTTTT GTCAAGGGCA GATAGGCAGA CGTCACAGCG ATACGTTCTT CTTTGATAAT    13020

CACCGCACCA TCATGTAGGG GAGTGTTGGG AATAAAAATG TTAATGAGAA GTTCTGCAGA    13080

AATCTTAGCA TCCAAGGGAA TTCCTGTCGA AATATACTCC TGCAAGGTAC GTACACGCTG    13140

AATAGCAACC AAGGCCCCGA TTTTACGAGG ACTCATGTAT TCAACAGACT TAACAAAGGC    13200

ACGAATCATC TGTTCCTCAG CACTAATAGG GGCATTGGAA AAGAAATCTG TCGCTCTTCC    13260

CAAACGTTCC AAACCAGTCC GAATCTCTGG AGAGAAGATA ACAACCGCCG CAATAACCCC    13320

ATAAGTAATA ATTTGATTGA TTAACCAAGA AATCGTAGTC AAACCAATCA TATTTGCAAG    13380
```

498

```
GATTTGAGCT AAAATAAACA CCAAAACTCC ACGTACCAAA ATCATAATCT TGGTTCCTGC      13440

AATAGCTTTT GTAAAATGGT ATAAAATATA AGCAACAATC AAAATATCAA TCAGATTGAT      13500

AGCTATCGTC CATGGACTTG CAAACAAACT GGTCCAATAT TGCAGATTGG ATAATTGTTG      13560

AAAATTCATC CCTGATATCC TCCCTATCAA AACACTTTCG TCCTATTATA CCATTTTCTG      13620

GCATTTTTT CCCTATCCTA GTCCATTTTA CATTGAACAA AAATATGATA AAATAAACTG       13680

ACTAAAAAAA ACAAAGGAGA AACTATGTCT CAACTCTATG ATATTACCAT TGTGGGTGGT      13740

GGTCCTGTCG GGCTTTTTGC AGCCTTTTAT GCCCACCTAC GCCAAGCCAA GGTTCAAATC      13800

ATCGACTCTC TTCCCCAGCT AGGTGGACAA CCTGCTATTC TCTACCCTGA AAAGGAAATC      13860

CTAGACGTAC CAGGCTTCCC AAACCTGACT GGAGAAGAGT TGACTAACCG CTTGATTGAA      13920

CAGCTAAATG GATTTGATAC CCCTATTCAT CTCAATGAAA CGGTTCTTGA GATTGACAAA      13980

CAAGAAGAAT TTGCCATCAC AACTTCTAAA GGAAGTCACC TGACTAAAAC AGTTATCATC      14040

GCTATGGGTG GCGGTGCCTT CAAACCACGT CCGCTGGAAC TTGAAGGGGT TGAGGGCTAT      14100

GAAAATATCC ACTACCACGT TTCTAACATT CAGCAATACG CTGGTAAGAA AGTGACGATT      14160

CTTGGTGGGG GAGACTCGGC TGTGGATTGG GCTTTGGCTT TTGAAAAAAT CGCACCAACT      14220

ACCCTTGTTC ACCGCAGAGA TAATTTCCGT GCCTTGGAAC ACAGTGTTCA AGCCTTGCAA      14280

GAATCATCTG TAACCATCAA GACACCATTC GCCCCTAGCC AACTCCTTGG AAATGGAAAA      14340

ACACTTGATA AACTTGAAAT CACAAAAGTC AAATCTGATG AAACTGAAAC CATTGACCTA      14400

GACCACCTCT TTGTCAACTA TGGTTTCAAA TCTTCTGTCG GTAACCTTAA AAACTGGGGG      14460

CTCGACCTCA ACCGTCACAA GATTATCGTC AACAGCAAAC AGGAATCCAG CCAAGCAGGT      14520

ATCTATGCTA TCGGTGACTG CTGCTACTAT GACGGAAAAA TTGATCTGAT TGCGACAGGC      14580

CTCGGAGAAG CTCCAACTGC TGTCAACAAC GCTATCAACT ACATTGACCC TGAACAAAAA      14640

GTACAACCAA AACACTCTAC TAGTTTATAA AAAAGAACCA CGAGTCACAT AGGATTCGTG      14700

GTTTTATAAT TCATCCGCTA TCTTATTGAT TTTTCTGAGT CTGTGATTGA CACCACTTTT      14760

GGTCAGAGGG GTGCTGAGAC TATCTGCTAA CTGCTGGATA GAGTAGTCTG GGTGCTGAAT      14820

CCTCAGTTGC GCCACTTCCT GCAAATCTAC TGGCAAATTT TCTAAGCCCA TGATATCTTT      14880

GATTTTACTG ATATTGTTAA TGGTCTTCAT GCTGGCAGAA ACTGTCCGAG CGATATTAGC      14940

TGTCTCGGCA TTATTAGCCC GATTGAGGTC GTTACGGGTT TCTCGCAAAA TCTTAACCCG      15000

CTCAAAATCA TCACGTGCCT GCATGGCTCC TATTACTATC AAGAAGTCCA TAATGTCTTC      15060

TGCTCGCTGG AGATAGGTCA CAGCCCCCTT CTTGCGCTCA AGCACCTTGG CATCCAGTAA      15120

AAACTGTTGG AGAAGGGAGG CAATTCCTTG CGCGTGGTCC AGATAAACAG AACTGATTTC      15180
```

499

```
CAACTGGTAC TTGCCTGACT CAGGGTCACG AATGCTCCCA TTTGCCAAGA AAGCGCCACA      15240

GAGATAGGCA CGACCTGCTT CCTCATCCGA TAAAATCGCC TCATCAATAC CTGTTTCCAG      15300

GCCAAAGAAA GAGTCTGCCA AGTGCAAATC ACTTAACAAA TCCTGCACCT TTTCATCTGT      15360

AAAAACGGTA TAGACGCGAT TCTTGCGAAG ATTGCTCCGT TGGTGGTGAC GAATTTCAGA      15420

TTTGATTTCA TAGAGATGGA GAAAGGACTC ATAGAGGTGA CGGGCCAGTT TGGCATTTTC      15480

TGTCACAACT GACAAAGTCA AGCCCGAAGT CGAGAGACCG ATGCTACCAG ACATTTTGAT      15540

AATGGCAGAT AATTCATGCC AGCTCAGATG GTGTTGGCCC AGGATTTCTT CTTTTACTGC      15600

TACTGTGAAA CTCATTTTTT CACCTGTATA ATGCGCATCA ACTCGTCCAC AATCAAATCT      15660

CCATCGTGGA AGGCACCGCC ATTTTCCAGA CGAAGGAAGT TAGATGAAAT CACGCGCGAA      15720

ACTTGCTTAC AAAGACCTAC AAAATCGTGT TCCACTTGCA CTAAGTATTC ATCAAAACGG      15780

TTGGAATTCA TGTATTCCTG AGGCACTTTT TCAATATTCA CCAAGACAGT GTCGATAAAA      15840

GGGCGACCAA GGTGACGATG CAAGACTTCC ACGTGGTCGC TATCTGTAAA GTGTTCCGTC      15900

TCCCCACGTT GGGTCATGAT ATTGCAGACA TAGGCAATTT CTGCCTTGGT TTCCAAAAGA      15960

GCCCGCCCAA TTTCCTTAAT CACGATATTG GGCAAAATAG AGGTAAAGAG GGAACCTGGC      16020

CCTAGGACAA TCATGTCACT TTCAAGGATG GTCTGCACTA CTCGACGGCT GGCCAGAGGC      16080

GTATCATCGT TTAGGGCATT GGTCACATAG ACATTGTCAA TTATGCCTCG ATGGTCTACA      16140

ATATGACTCT CTCCAGCCAC TTCTGTCCCA TCCTGAAAGA CTGCATGAAG GGTCAAAGGA      16200

TGGTCACTGG AAGGATAAAT TTTCCCTGTT GTATGGAAAA ATTTGCTCAA TAACTGCATG      16260

GCATTATAGG TTGAACCCTG CATTTCTGAC AAGCCAGCAA TGATGAGATT TCCCAATGGA      16320

TGGCCAGCAA AGGCTCCGGC ATCCTCAGAG AACCGATACT GAAAGACCTT CTCATAAAAC      16380

TTAGGCATAT CCGACATGGC CACAAGGACA TTACGAAGAT CACCTGGCGG TGTCAACTGT      16440

TGCATATTTT TTCGGAGTTC ACCTGAAGAA CCACCATCAT CTGCCACCGT CACGATAGCT      16500

GCGATTTCCA CATCTTTTTC CCGCAGACTT TTTAGAATGA CGGGACTTCC AGTCCCTCCA      16560

CCAATCACCG TTATCTTTGG TTTTCTCATG AACGGTTTAC CGTTTCCTTT CTGCGGTCTT      16620

TGTCGCGATG CCCTTCATTA ACAGACCAAT TCTTGGATAA GTCCTGCGCC AAGCGTTTAG      16680

CAAATGCCAC ACTACGGTGT TGTCCACCCG TACATCCCAT GGCAATGGTC AAAACGGACT      16740

TACCTTCCTT TTGGTAACTT GGCAGAATCG GCTCAATCAA GGCCAATAAA TGTTGATAAA      16800

AGTCTTCTGA CTCAGGATGG TTCATGACAT AATCATAAAC AGGTTCATCC ACACCCGTTT      16860

GGTTTCTCAG TTCTGGTAAA TAATAGGGAT TTGGCAAGAA ACGGACATCA AAGACCAAGT      16920
```

```
                                    500
CCGCATCAAT CGGGATTCCA TACTTAAATC CGAAAGACAT GACTTCGATA CGGAAAGACT     16980

GGGCTTGTTC TTGGTCTGAA AACTGCTCTG CAAGGGTTTT GCGCAgCTCA CGTGGAGTGA     17040

GTTCAGTCGT ATCCACCACA TTTTGGCTCA TATTTTTCAA AGGTGCCAAG AGTTCACGTT     17100

CCAACTTGAT TCCATCTAAA ATACGACCGT CTGCTGCTAG TGGGTGACTC CGTCTGGTTT     17160

CCTTGTAACG AGCGACCAAT TCCTTATCAG CCGCATCCAA AAAGAGGATT TTGAAATCCA     17220

AACCATCTTG ATTTTCCAAC TCATCCAAAA CAGCTTGAAT CTCTGAAAAG AAAGAACGGC     17280

TACGCATATC CACTACCAAG GCCAACTTAG GATTGTCTTC CTTAATTTCA ACCAGCTGCA     17340

AAAACTTAGG CAAGAGAGCT GGCGGCATAT TATCAATGGT GAAATAACCT AGATCCTCGA     17400

AGGACTGAAT GGCTACAGTT TTCCCTGCGC CACTCATCCC TGTCACAATC ACCAAGTGAA     17460

GTTGTTTCTT TGTCATCTTT TTCTCCTTAT ATCAAAAGAA GTTTGGCAAC ACCAAACTTC     17520

AACTAGCTTA TCCAATCTCT GCGATGACTT CAATTTCGAC TTTTACATCA·CGAGGAAGAC     17580

GAGCTACCTC CACAGCTGAA CGAGCTGGGA ATTCCTCTTT GAAGGCCGTT TGGTAAACCT     17640

CATTAAAAGG AACAAAGTCG TTCATATCGC TCAAGAAGCA AGTTGTTTTG ACAACATGGT     17700

CAAAGTCTGT TCCTGCTTCT GCCAAAATAG CACCGATGTT TTTCAAGACT TGCTCTGTCT     17760

GTTCTTGGAT ATTCTCTCCT ACAATTTCCC CAGTTTCAGG GGATAGGGGA ACTTGACCGC     17820

TAGCAAACAA AAGGTTGCCA ACGATTTTTC CTTGAACATA GGGTCCGATA GCCTTTGGGG     17880

CCTTATCTGT ATGAATTGTT TTTGCCATTT TCTTTTCCTC ACAATTTTTC TAAGATTGCA     17940

TCCCAAGCCT CATCCATCCC TGCCTTACTG ACAGATGAAA AGAGGATGAA ATCGTCACTC     18000

GGGTCAAAGT TTAATTTCTT TTTGATTGCT GATTCATGCT TGTTCCATTT ACCACGAGGA     18060

ATCTTGTCCG CCTTGGTCGC CACAATGATG ACTGGAATCT CATAATACTT GAGAAATTCG     18120

TACATCTGCA CATCATCTGC TGACGGGTCA TGACGAAGGT CAACTAGACT GACAACCGCA     18180

CGGAGATTTT CCCGAGTCGT TAAGTACTCC TCAATCATGC ACCCCCACTT TTCACGTTCC     18240

TTTTTAGAAA CACGAGCATA GCCATAACCA GGCACATCCA CAAAGCGCAT CTTGTCATCA     18300

ATGTTAAAAA AGTTCAGGAG CTGGGTTTTA CCAGGTTTTC CTGATGTACG GGCGAGATTC     18360

TTACGGTTCA ACATAGTGTT GATAAAGCTG GATTTACCAA CATTTGAACG CCCTGCTAGG     18420

GCAATCTCTG GCAGTTCATC CTGCGGATAG TGGGACTTAT TAGCTGCACT GAGCAAGATT     18480

TCAGCATTGT GTGTATTAAG TTCCATAGTC ACCTCTAGGC TGTTTCTAGG ATCGGTTTAT     18540

CCGTTCCATC TACAGTTTCT TTAGTGATGC GAACCAATTT CACATTTTCC TGACTCGGCA     18600

CCTCAAACAT GACATCTAGC ATGGTTTCTT CGATGATGGA GCGAAGTCCA CGCGCCCCTG     18660

TCTTCCGTTC GATTGCTTTA TTAGCAATCT CTTGAAGGGC TTCGTCGTCA AATTCCAACT     18720
```

501

```
CAACATCATC ATAAGAAAGC AAGGTTTGGT ATTGTTTCAC CAAGGCATTT CTTGGCTCTT   18780

TCAAGATGCG AACCAAGTCA TCAACGGTCA ATTGCTCAAG AGCCGCAAAA ACAGGCAAGC   18840

GTCCAATCAA CTCAGGGATA ATACCAAATT TTTGAATGTC TTCAGCGATG ATTTCTTGCA   18900

TGTATGAGCT GTTTTCGTCA ATCGCCTTAT TATTTTGACC AAATCCGATG ACTTTTTCAC   18960

CCAGACGTTG TTTGACAATT TCTTCAATAC CATCAAAAGC ACCACCCACG ATGAAGAGGA   19020

TATTTTTTGT ATCCACTTGA ATCATCTCTT GTTGTGGATG TTTGCGTCCA CCTTGAGGCG   19080

GTACGCTAGC AACAGTTCCC TCAATAATCT TGAGAAGGGC TTGTTGCACC CCTTCACCAG   19140

AAACATCACG TGTGATAGAC ACATTCTCAC TCTTCTTGGC AATCTTGTCA ATTTCATCCA   19200

CATAGATAAT GCCACGCTCT GCACGTTCGA TGTTAAAGTC AGCAACCTGC AAGAGTTTGA   19260

GGAGGATATT TTCCACATCC TCACCCACAT AACCAGCCTC CGTCAGAGCT GTCGCATCCG   19320

CAATAGCAAA AGGTACATTC AAGCTCTTAG CCAAGGTCTG GGCAAGGAAA GTTTTCCCTG   19380

AACCAGTTGG GCCAATCATC AAAATGTTTG ACTTCTGCAA ATCCACATCT TCTGACTCTT   19440

CGCGTGTATC GTGGAAATTG ATGCGTTTGT AGTGGTTATA AACCGCCACT GCCAAGGCAC   19500

GCTTGGCACG ATCTTGACCA ATTACATAGT GGTTCAAGAT ATGGAGGAGT TCAATTGGTT   19560

TTGGCACCTC AGACAAGTCT GCCAAGACTT CCTCAACCAA TTCTTCTCGA ATGATTTCCT   19620

GAGCTAACTC CACGCATTCA TTACAAATAA AAGCATTGTT GCCAGCAATT ATTTTTTGTA   19680

CTTCTTCTTG GTTTTTGCCA CAAAATGAGC AATAAACCAT CATATCATTT TTTCTATTTG   19740

TAGACATGAT TTCCTTCCAT TCTATACTGT CATTCTATCT AAAATAAGGT CATGTAAAAA   19800

GCATGAATAC TATTGACCAG ATTGGTAAAG GCATTTAACC AAAGGAGGAT AGAAAGCCCG   19860

TAACGCTTTT TACGAAAAGC TTGTGCTCCT GCCAGAAAGC AGATGAAACA CAGAAAAGCC   19920

GTGAATAGAC CAAATAAACT CCGTTCCATT AGACTTCCTT TCTCTTGCGG TATTGGATGG   19980

TAAAATCATA AGGATTCTTC TCATCTTTGG CGTAAAATTT GCTTGAAACT GTCTCAAAAA   20040

GAGACAAGTC AAGTTCTTCA GGGAAATAGG TATCTCCTTC CACCCGAGCA TGAATGTGAG   20100

TGACAATCAC TTCATCAAGG TAAGGTTCAA AAGCCTGAAA AATTTGCTTC CCACCGATAA   20160

TGTAGAGATT CTTTTCTTGA GCCTGATACC AGTCAAGAAC AGACTGGACG TCCTGAAAAG   20220

TAGCAACCCC ATCTATCTTT TCTTCCGGAT TACGCGTCAA AATCAAGGTT TCCCGTTTTG   20280

GAAGCAAGCG ACGCCCCATC CCATCAAAGG TCACACGCCC CATCAAGATA GCATGATTCA   20340

GAGTTGTTTC TTTAAAGTGC TGCAATTCTG CTGGCAAATG CCAAGGCAGA CGATTTTCCT   20400

TACCAATCAC ACCCTCTTCA TCCTGGGCCC AAATAGCTAC GATTTTCTTA GTCATGCTTC   20460
```

502

```
CATCCTTTTC ACTGATAGTA CTATTTTATC AAAAAACTCA AAAAAAGACT GGTTTGGAAT    20520

AGCTTACAAA ATAGAAAAAA TCTGTAAGAA ATTTCCTACA GATTTATCTA TGTTTCCTTA    20580

TTTCTTACAA ACCAGGTGCT TGTCCAAGTT CGGCTGCAAG CATCCAAATT GTTTTATCTG    20640

TTTCAGTTTT AGCGCCTGCA AAGATACCGT TTGTCACATC GTCACCTTCT TCATCAGTGA    20700

CATCCAAACC TTTTTGGAAA AGTTCTGACA AGTAACGGTA GATAACAAGA ACACGTTCCA    20760

AGCTTTCTTC AACATTACGG TATTCACCAG CTTCTTCTTC GATTTCACTA TTTTGAAGGA    20820

ACTCTGTCAA TGTAGAGAAT GGGCTTCCAC CGAGTGTAAT CAAGCGTTCA CTGATTTCAT    20880

CCAATTGACC GTCAAGAGCT TCCATGTACT CATCCATTTT TGGATGCCAT ACAAGGAAAC    20940

CACGACCATG CATATACCAG TGCACTTGGT GCAAAGCAAC GTGAGCTACA TACAAATCAG    21000

CAACAGCTTG GTTCAAGACT TCCTTTGTTT TTGCCAATGC                          21040
```

(2) INFORMATION FOR SEQ ID NO: 56:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2387 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

```
ATTCTTAATA CGATTAAAAG GCTTATTACT AAAAGAAAAT TTCAGTTAGA TGAACTAAAC      60

TTGCTCGTCA AATCCCGATT TAACGAGATG TTTGGGGAAA ATAAAATATT TGAAAGCATT     120

GATAACTTAT TTGATATTAT AGATGGTGAT AGGGGCAAAA ATTATCCTAA ATCAGATGAG     180

TTGTTTAGTG AGGAGTACTG TTTATTTTTA AATACAAAGA ATGTTACTAA AAACGGATTT     240

TCATTCGATA CAAAGCAATT TATCACTAAA ACAAAGGATA AATTACTTCG AAAAGGCAAA     300

CTTGAGCGTT ATGATATAGT CTTGACAACA AGAGGTACTG TTGGAAATGT AGCGTACTAC     360

GATGAATTAA TAAAATATAA ACATTTACGT ATAAATTCAG GTATGGTAAT ATTACGTCCC     420

AAGACACCAA ATCTAAATCA GAAATTTATT ATCCATGTTT TAAGGAATAA TAATTATAGT     480

CGAGTGATAT CAGGAAGTGC TCAGCCTCAG TTACCAATTA CAAAATTAAA AAAAATACTT     540

CTCCCCCTCC CCCCACTAGC CCTCCAAAAT GAGTTCGCAG ACTTTGTAGT CCAGGTCGAC     600

AAATCACAAT TGGCAATCCA AAAATCTCTG GAAGAACTTG AAACTTTGAA GAAATCTCTG     660

ATGCAGGAGT ATTTTGGCTG ATATTCTGCC ATTGTAATTA CGGTAATGAT TTGTTATAAT     720

ACTTCAAAGG AGGAAATCAG ATGGTAGTAA AAACAAGAAA ACAAGGAAAT TCAATCACCA     780

TTACGATTCC AAGTGAATTT AATATTCCAA GTGGTGTTAA ATACGAAGCG AAATTGTTAC     840
```

503

```
CAAGTGGTGA GATTATCTTT ACTCCTGAAG AATTGGGGCA GCAGGTTTCT TATGTATCTG      900

ATGATGCCTT TGACTTAAAT TTAGATAAAA TATTTGACGA ATACGACGAT GTTTTCAAAG      960

CTTTGGTGGA AAAATGACAA TCTATTTGAC AGAAAAGCAA ATTGAAAAAA TAAATGCTTT     1020

AGCAATTCAA CGGTATTCTC CAAATGAGAA AATTCAAACA GTTAGTCCTT CTGCCTTAAA     1080

TATGATTGTG AACTTACCAG AACAATTTGT CTTTGGGAAG CCTCTTTATC CAACAATTTT     1140

TGATAAAGCA ACGATACTAT TTGTCCAATT GATAAAGAAG CATGTTTTTG CTAATGCTAA     1200

TAAAAGAACT GCTTTCTTCG TTTTGGTCAA ATTTTTACAA TTAAACGGCT ATCGTTTTTC     1260

TGTAACGGTA GAAGAAGCAG TAAAAATGTG TGTAACCATC GCAGTAGAAG CTTTAACTGA     1320

TGAAAAAATG ACAAGCTACT CCAAATGGAT TTCTGAACAT TCTGTTAGAG AAAAGGTCAA     1380

AAAGTAACCT AGTATGCTGG ATTTGAATGA GCACAAGAAA ATAAATGAAC AGACAATATT     1440

AGAATTCTGT AATGCAGAAA CTGATATTGT CTCTTTTTAT TGATGAATAA GAAAGTGAGA     1500

AATTATGGAA TCAAAAGTTA CAATTATCAT GCAAGAAATG TTACCTCTTT TAAATAATGA     1560

ACAATTACTA GCGTTGAGAG AGAGTTTAGA ACATCATCTA GTAGACGGAA AAAAGCAGCA     1620

GAAGTATTCG AATAATAACC TGTTGCAACT ATTTATTACC GCCAAGCAGG TAGAGGGCTG     1680

TAGCTCAAAA ACAATTCGTT ATTATCAGAG GACGATTGAA AACTTGTTTA ATGCTATTAA     1740

AGAGTCTGTG ACACAACTCA CAACAGATGA TTTAAGGAGT TATTTAGCAA ATTACCAGTC     1800

TGAAAAGGAT TGTAGTAAGG CAAATTTAGA CAATATTAGG CGTATATTGT CTTCTTTTTT     1860

TGCTTGGCTT GAGCAAGAGG ATATATCATT AAAAATTCCCA TTCGACGGAT ACAGAAAATT     1920

AAGACTGAGC AAAAATGTGAA GGAAACTTAT ACTGATGAAC ATTTGGAAAT TATGCGTGAT     1980

AACTGTGAAA ATTTGAGAGA TTTGGCAATA ATAGACCTAC TAGCATCGAC AGGTATGCGT     2040

GTAGGGGAGC TTGTACAGTT GAATCGTTCA GATATTGATT TTGAAAACAG AGAGTGTGTT     2100

GTCTTTGGTA AAGGAAAGAA GGAGAGACCA GTATATTTTG ACGCTCGTAC GAAAAATTCAT     2160

TTAAGAAATT ATCTTAACGA CAGAAAAGAT AGTCACCCTG CTCTTTTTGT AACGCTAGTT     2220

GGAAAAGTCC AGAGGCTTGG AATTGCTGGT GTAGAGATTC GCTTAAGAAA GTTAGGAGAC     2280

AAACTCGGCA TACAAAAGGT TCACCCACAT AAGTTCAGAA GAACTTTAGC GACTAAGGCA     2340

ATTGATAAAG GTATGCCTAT CGAACAAGTC CAAAAACTGC TAGGTCA                   2387
```

(2) INFORMATION FOR SEQ ID NO: 57:

       (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 10669 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double

504
(D) TOPOLOGY: linear

· (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

```
ATATTAAAGC GACTTTCTGT GCGCTAGGGA AAAATGTTCC TGGGAATGAG GACTTGGTGA        60

AGAGGATAAA ATCTGAAGGT CATGTTGTTG GAAACCATAG CTGGAGCCAT CCGATTCTCT       120

CGCAACTCTC TCTTGATGAA GCTAAAAAGC AGATTACTGA TACTGAGGAT GTGCTAACTA       180

AAGTGCTGGG TTCTAGTTCT AAACTCATGC GTCCACCTTA TGGTGCTATT ACAGATGATA       240

TTCGCAATAG CTTGGATTTG AGCTTTATCA TGTGGGATGT GGATAGTCTG GACTGGAAGA       300

GTAAAAATGA AGCATCTATT TTGACAGAAA TTCAGTATCA AGTAGCTAAT GGCTCTATCG       360

TTTTGATGCA TGATATTCAC AGTCCGACAG TCAATGCCTT GCCAAGGGTC ATTGAGTATT       420

TGAAAAATCA AGGTTATACC TTTGTGACCA TACCAGAGAT GCTCAATACT CGCCTAAAAG       480

CTCATGAGCT GTACTATAGT CGTGATGAAT AAGCAAGAAA AAATAGGTCT GTTAGATATT       540

TGACAGACTT ATTTTTTACA GAATATAGTA CTACTTAAAA AATGTTTTAT GCTATAATTG       600

ATGAATAAAA TAGAAGGAGA AGCATATGAA TACCTATCAA TTAAATAATG GAGTAGAAAT       660

TCCAGTATTG GGATTTGGAA CTTTTAAGGC TAAGGATGGA GAAGAAGCCT ATCGTGCAGT       720

GTTAGAAGCC TTGAAGGCTG GTTATCGTCA TATTGATACG GCGGCGATTT ATCAGAATGA       780

AGAAAGTGTT GGTCAAGCAA TCAAAGATAG CGGAGTTCCA CGTGAAGAAA TGTTCGTAAC       840

TACCAAGCTT TGGAATAGTC AGCAAACCTA TGAGCAAACT CGTCAAGCTT TGGAAAAATC       900

TATAGAAAAA CTGGGCTTGG ATTATTTGGA TTTGTATTTG ATTCATTGGC CGAACCCAAA       960

ACCGCTCAGA GAAAATGACG CATGGAAAAC TCGCAATGCG GAAGTTTGGA GAGCGATGGA      1020

AGACCTCTAT CAAGAAGGGA AAATCCGTGC TATCGGCGTT AGCAATTTTC TTCCCCATCA      1080

TTTGGATGCC TTGCTTGAAA CTGCAACTAT CGTTCCTGCG GTCAATCAAG TTCGCTTGGC      1140

GCCAGGTGTG TATCAAGATC AAGTCGTAGC TTACTGTCGT GAAAAGGGAA TTTTATTGGA      1200

AGCTTGGGGG CCTTTTGGAC AAGGAGAACT GTTTGATAGC AAGCAAGTCC AAGAAATAGC      1260

AGCAAATCAC GGAAAATCGG TTGCTCAGAT AGCCTTGGCC TGGAGCTTGG CAGAAGGATT      1320

TTTACCACTT CCAAAATCTG TCACAACCTC TCGTATTCAA GCTAATCTTG ATTGCTTTGG      1380

AATTGAACTG AGTCATGAGG AGAGAGAAAC CTTAAAAACG ATTGCTGTTC AATCGGGTGC      1440

TCCACGAGTT GATGATGTGG ATTTCTAGAA AATCATAAAA AGAATTGTAC ATTATTCTAA      1500

TTTTTGATAT AATAGTCAGC AGGAAAGAAA GTCTTATGGC GTTCTTCAAG CGAGCTTGGG      1560

ATAGTGGGAG CCAAGTAGGG CAAAATAAAG GGCTGGCGCT TTCTGTAGTA TTTTCAAAAA      1620
```

505

```
CAATGAAGTA ATAAATTAGG GTGGAACCGC GTTTCTGACG CCCCTAGGTT AAATCAACCT    1680

AGGATTGTCA GATGTGGTTC TTTTGCTTAT TCAGTCTATT GTGTGAAAGA AAGGAGAGCC    1740

GTGGACAACC TTTATCTTGT AAAAGACGAT AGTCAACTAG CTACATTTCG TGATTTTGTA    1800

GTAAGAAATA CTGAAAAGTT GAAAGATTAT CAATCTTTTT TAAAGAATGA ACTTGCAGTC    1860

TGTGATTTAC CGCAAGCTGT TATTTGGTCA GATTTTAATG CTGCTACACA GATTATTAGG    1920

GAAAGTGCTG TTCCAACCTA TACAAATAAT AGACGAGTGG TTATGACGCC TGATTTAGCT    1980

GTTTGGAAAG AATTGTATTT GTATCAGTTG ATGGACTACG AGTGTTCTGA GCAAACTCAA    2040

GCAATAGAAA GTCACTATCA TTCTTTATCT GAAAATTTCC TCTTACAGAT TGTAGGACAT    2100

GAGTTAGCTC ATTGGTCGGA CATTTTTTAG ATGATTTTGA TGGTTATGAC TCTTATATCT    2160

GGTTCGAAGA GGGGATGGTT GAATATATTA GTCGCAAGTA TTTCTTGACA GAAGAGGAAT    2220

TTCAAGCGGA AAAAATTTGT AATCAATCTC TCGTAGAACT TTTTCAGAAG AAGTATAGTT    2280

GGCATTCATT GAATGATTTT GGTTCTTCGA CTTATGATAA GAACTATGCA AGTATTTTTT    2340

ATGAATACTG GCGCAGCTTT TTGACAGTAG ATAAGTTGGT AGAAAATTTA GGTAGTGTAC    2400

AAGCGGTCTT AGATTCTTAT CATTTATGGG CAAATACAGA AAAAACTTTT CCCTTGTTAG    2460

ATTGGTTTGT TCAGCAGAAA TTAATTGAAA AAGAAATATA AAAACTAAAG GAGTAAACAA    2520

TGTCTAAGAA ATTAACATTT CACTGCATCA GTGGCAGAGA CCTCCTTACA GTCGGGCTGC    2580

TCCACGCTCA GCACTAGAGT GCCTGAGCTA GACGCAGTAC TAACTCGTCT TGCCTCGTAT    2640

GATCGACGAG GCAGACTCGT GTCGCAAGTA ATTATTTTTT ATTAAGGAGT ATTCAATGTC    2700

TAAGAAATTA ACATTTCACT GCGTCAGTGG CAGAAACCTC CTTACAGTCG GACTGCCCTA    2760

CGCTCAGCAC TAGAGTGCCT GAGCTAGACG CAGTACTAAC TCGTCTTGCC TCGTATAATC    2820

GACGAGGCAG ACTCGTGTCG CAAGAAATTA TTTTTTATTA AGGAGTATTC AATGTCTAAG    2880

AAATTAACAT TTCAAGAAAT TATTTTGACT TTGCAACAAT TTTGGAATGA CCAAGATTGT    2940

ATGCTTATGC AGGCTTATGA TAATGAAAAA GGTGCGGGGA CAATGAGTCC TTACACTTTC    3000

CTTCGTGCTA TCGGACCTGA GCCATGGAAT GCAGCTTATG TAGAGCCATC ACGTCGTCCT    3060

GCTGACGGTC GTTATGGGGA AAACCCTAAC CGTCTCTACC AACACCACCA ATTCCAGGTG    3120

GTCATGAAGC CTTCTCCATC AAATATCCAA GAACTTTACC TTGAGTCTTT GGAAAAATTG    3180

GGAATCAATC CTTTGGAGCA CGATATTCGT TTTGTTGAGG ACAACTGGGA AAACCCATCA    3240

ACTGGTTCAG CTGGTCTTGG TTGGGAAGTT TGGCTTGACG GAATGGAAAT CACTCAGTTC    3300

ACTTATTTCC AACAAGTCGG TGGATTGGCA ACTGGCCCTG TGACTGCGGA AGTTACCTAT    3360
```

506

```
GGTTTGGAGC GCTTGGCTTC TTACATTCAA GAAGTAGACT CTGTCTATGA TATCGAGTGG      3420

GCTGATGGTG TAAAATACGG AGAAATCTTT ATCCAGCCTG AGTATGAGCA CTCAAAATAT      3480

TCATTTGAAA TTTCGGACCA AGAAATGTTG CTTGAAAACT TTGATAAGTT TGAAAAAGAA      3540

GCTGGTCGTG CATTAGAAGA AGGCTTGGTA CACCCTGCCT ATGACTATGT TCTCAAATGT      3600

TCACATACCT TTAATCTGCT TGACGCGCGT GGTGCCGTAT CTGTAACAGA GCGTGCAGGC      3660

TATATCGCTC GTATCCGTAA CTTGGCCCGT GTCGTAGCCA AAACCTTTGT CGCAGAACGC      3720

AAACGCCTAG GCTACCCACT TTTGGATGAA GAAACAAGAG CTAAACTCCT AGCAGAAGAC      3780

GCAGAATAAA GAGAGTGACA AATTACGAAA ATGGGCGAAC AGAGTGAGCC CTGAGCCAGT      3840

TGCCGCAGTG ATGAAGGTAT CCTTAGTGAA ACTAAGGATA CTAGGCAAAA TTGGAGACTT      3900

TTGGCTCCAA TTTTAGCAAT GAAACAACGA AGTTGGTTGC TTGCGTGCCA ATCACATAAG      3960

GCAAACTGGA AAATAAAAAG ATACTTTTCG GAGAAAAAAC ATGACAAAAA ACTTATTAGT      4020

AGAACTCGGT CTTGAAGAAT TACCAGCCTA TGTTGTTACG CCAAGTGAAA AACAACTAGG      4080

CGAAAAAATG GCAGCCTTCC TCAAGGGAAA ACGCCTGTCT TTTGAAGCCA TTCAAACTTT      4140

CTCAACACCA CGTCGTTTGG CTGTTCGTGT AACTGGTCTT GCAGACAAAC AGTCTGATTT      4200

AACAGAAGAT TTCAAGGGTC CAGCAAAGAA AATTGCCTTA GATAGTGATG GAAACTTCAC      4260

CAAAGCAGCT CAAGGATTTG TCCGTGGGAA AGGTTTGACT GTTGAAGATA TCGAATTCCG      4320

TGAAATCAAG GGTGAAGAAT ATGTCTATGT CACTAAGGAA GAAATTGGTC AAGCAGTTGA      4380

AGCCATTGTT CCAGGCATTG TGGATGTCTT GAAGTCACTG ACTTTCCCTG TCAGCATGCA      4440

CTGGGCGGGA AATAGCTTTG AATACATCCG CCCTGTTCAC ACTTTAACTG TTCTCTTGGA      4500

TGAGCAAGAG TTTGACTTGG ATTTCCTTGA TATCAAGGGA AGTCGTGTGA GTCGTGGCCA      4560

TCGTTTTTTG GGACAAGAAA CCAAGATTCA GTCAGCATTG AGCTATGAAG AAGACCTTCG      4620

TAAGCAGTTT GTAATCGCAG ATCCATGTGA ACGTGAGCAA ATGATTGTTG ACCAAATCAA      4680

GGAAATTGAG GCAAAACATG GTGTACGTAT CGAAATTGAT GCGGATTTGC TGAATGAAGT      4740

CTTGAATTTG GTTGAATACC CAACTGCCTT CATGGGAAGT TTTGATGCTA AATACCTTGA      4800

AGTTCCAGAA GAAGTCTTGG TGACTTCTAT GAAGGAACAC CAGCGTTACT TTGTTGTTCG      4860

TGATCAAGAT GGAAAACTCT TGCCAAACTT CATTTCTGTT CGTAACGGAA ACGCAGAGCG      4920

TTTGAAAAAT GTCATCAAAG GAAATGAAAA AGTCTTGGTA GCCCGCTTGG AAGACGGAGA      4980

ATTCTTCTGG CGTGAAGACC AAAAATTGGT GATTTCAGAT CTTGTTGAAA AATTAAACAA      5040

TGTCACCTTC CATGAGAAGA TTGGTTCTCT TCGTGAACAC ATGATTCGTA CGGGTCAAAT      5100

CACTGTACTT TTGGCAGAAA AAGCTAGTTT GTCAGTGGAT GAAACAGTTG ACCTTGCTCG      5160
```

507

```
TGCAGCAGCC ATTTACAAGT TTGACTTGTT GACAGGTATG GTTGGTGAAT TTGACGAACT     5220

CCAAGGAATT ATGGGTGAAA AATACACCCT TCTTGCTGGT GAAACTCCAG CGGTGGCAGC     5280

TGCTATTCGT GAACACTACA TGCCTACATC AGCTGAAGGA GAACTTCCAG AGAGCAAGGT     5340

CGGCGCAGTT CTAGCCATTG CAGACAAATT GGATACGATT TTGAGTTTCT TCTCAGTAGG     5400

ATTGATTCCA TCAGGTTCTA ATGACCCTTA TGCCCTTCGT CGTGCAACTC AAGGTGTGGT     5460

TCGTATCTTG GATGCCTTTG GTTGGCACAT TGCTATGGAT GAGCTGATTG ATAGCCTTTA     5520

TGCATTGAAA TTTGACAGTT TGACTTATGA AAATAAAGCA GAGGTTATGG ACTTTATCAA     5580

GGCTCGTGTT GATAAGATGA TGGGCTCTAC TCCAAAAGAT ATCAAGGAAG CAGTTCTTGC     5640

AGGTTCAAAC TTTGTTGTGG CAGATATGTT GGAAGCAGCA AGTGCTCTCG TAGAAGTAAG     5700

CAAGGAAGAA GATTTTAAAC CATCTGTTGA ATCACTTTCT CGTGCCTTTA ACCTGGCCGA     5760

GAAGGCAGAA GGGGTTGCTA CGGTTGATTC AGCACTATTT GAGAATGACC AAGAAAAAGC     5820

TTTGGCAGAA GCAGTAGAAA CACTCATTTT ATCAGGACCT GCAAGTCAGC AATTGAAACA     5880

ACTTTTTGCG CTTAGCCCAG TCATTGATGC TTTCTTTGAA AATACTATGG TAATGGCTGA     5940

AGATCAGGCT GTCCGTCAAA ATCGTTTGGC AATCTTGTCA CAACTAACCA AGAAAGCAGC     6000

TAAGTTTGCT TGTTTTAACC AAAATTAACAC TAAATAAAAT TTGATAAACG GACTTTATCT     6060

TATTACAAAG GAGAAGAAAT GGATCCGAAA AAAATTGCTC GTATCAATGA GCTTGCTAAA     6120

AAGAAAAAAA CAGAAGGCTT AACACCAGAA GAAAAAGTGG AACAAGCCAA ACTACGTGAG     6180

GAGTACATCG AAGGTTATCG CCGCGCTGTT CGTCACCACA TTGAAGGAAT CAAAAATTGTG     6240

GACGAAGAAG GAAACGATGT TACACCAGAA AAACTACGCC AAGTACAACG TGAAAAAGGA     6300

TTACATGGCC GTAGTCTTGA TGATCCAAAT TCATAATAAT ACTCTTCGAA AATCAAATTC     6360

AAACCACGTC AGCTTCACCT TGCCGTACTT AAGTACAGCC TGCGGCTAGC TTCCTAGTTT     6420

GCTCTTTGAT TTTCATTGAG TATATGTATT CTTTCTTTTA ACAAAGATAG ATGAAACGAT     6480

AACAAAGAGA CTAGCAGTTT GTGTTTGCTA GTCTTTTTTC GCTAAAAAAG GAACCATAAT     6540

GGTTCCTAAA AACTATCATT AGTAACTTGC ACCGGCTGTA GCGTCTGCGT CACCACCGTG     6600

GCCTCCAGCA TCCCCTGAAT CAGAAGCGCC AGAAGTAGCA TCGGCGTCTC CATGACCTCC     6660

GGCAGCAGGA GCAAATGGTC CGCTACCACC CACCAAACGT TGACCAGTCT CTTTTAGGTA     6720

CCAGTCAAGC CATGGTTGGA AGTTAAAGAC GATTTCATTG ATACCAGCGT ATGATCCATC     6780

AGGATAGTAC ATTGCTTGGT AGTTGTGAGT GTTGATAACA CCTGCAGGAG AACCTGGAAC     6840

GATCGTACGG ACGTATTCTT GGTTTCCGTT GCGAAGTGTT CCGATAACCC ACTCTACGTT     6900
```

508

```
CTTCATACGT GCTGGTGGAA GAGAACCATG AACAGTCGAC ATACGGCTAC CTGATTGAGG      6960

TGGTACACGT TTAGCGAACA TAGTGTCTGG ATCTTGGTGA GCGTTGTTGT AGTAGAGGAA      7020

TTGGTTGTTG TCGTCAGCGT ATGTCAATTC AAATGGCATA GCTTTCAAGA ACATATCAAT      7080

TTGGTTAACT GTTAGGATAC CGTGGTCCAA TTTGACATAG GTATCACCAG AAACAGCACC      7140

AGTGAATGCT GCAACTTTTT CTACCCATTC TGGATCGTCA GGGTCAACTT CTGTGATGGT      7200

TGTAGCGATT GGTTTTCCAC AATCCAAGTC TTCTGATTCG ATTGGTTTTG GTTTTTTCAA      7260

TTTCGAAACG ACTCCTACGT ATTTAACAAA GTTATCTAAG CAAGTTTCAA GGAATTTAAC      7320

AGTGCCTTCG TTGGTGATAT TTCCGTTGTT ATCAAAAGCT TCCTTAGCTT TACCAAGAAG      7380

GAATTCGTTA CCTGGAAGCG TGTAGGCATT AACACCTGGA GCATCAAGGA TTTTACGAAG      7440

GTGAACTTGA GCACGTGATG TTCCTTGGTC ATAGTATGAT GCACCCACAA TCATAACAGG      7500

CTTGTTTTCA AATGGATGAA CTTCGTATGA AAGCCATTCA AGTACAGATT TGAGTGAAGC      7560

TGAGATAGTG TGGTTATGCT CAGGAGTAGC AATGATAACA CCATCTGCAC GAGTAATTTT      7620

GTTATATAAA TAACGTAATT GGAAACTTTC ATCCCATTTT TCATCTTGGT TAAACATTGG      7680

AACTTCGTCA ATTTCAAGAA CTTCTAATTC AAATTTGAGT TTGAAGTAGC GACGGATAAA      7740

TTCCAAGAGC TTACGGTTAT ATGATTGATC GTAGTTTGAT CCAACAAGTC CAACAAATTT      7800

CATTCTTTTT GGTCTCCTAT CTTACAAATT TTCCCAGTCA AAGTCTTCAG CATCTTTGCG      7860

AAGTAATTCT TGTGCATTAC GTAATTTTTC TGTGATTTTT ACAAAGATAC GGAAGTCATC      7920

AAAGATGGCA TCCAATTTCT TGATAACATC AAGGTCAACC AAGTCGCCAC TTGGGTTAAA      7980

TGCTTGAAGA GAGTGTGAGA GCAAGAATTC ATCTGGAAGA ACATTTGCCT TGATTTCAGG      8040

AGCATTCAAG ATTTGACGAA GTTGCAATTG GGCACGAGAT GAACCAAGCG TACCGTAAGA      8100

AGCACCTGTA ATCATGATTG GTTTGTTCAA AAGTGGGTAA ATACCATAAG ACAACCAAGC      8160

AAGAGCGCTC ATCAAAACAG CTGGAATAGA GTGATCATAC TCAGGAGTAC CGATAATAAC      8220

GCCATCTGCC TCTTCGATTT TAGCAGCAAT TTCCAATATT TCAGCAGGTA CTTGCTTGTC      8280

AGCTGGTTTG TTGAAGACAG GAATGGCCTT GATTTCAACA AGTTCAATTT CAGCTTTGTC      8340

AGTAAAGTGT TTTTGCATGT ATTGAAGCAA TTGACGGTTT GTAGAACGTT TTGAATTTGT      8400

TCCAACAATA GCAATAAGTT TTAACATGAG ATTTCCTTTC TCTTTTTACA TAATACAATT      8460

TTAAAATTCC ATTGAAACAG TTGTCTCTAT AGAGTAGGAA TTCCTGAAGA ACAGCTTAGG      8520

TGGCCTTCTT TATCGATGAG GATGACTTCG ATGCCCTCCA AACTTTCGAC TTGCCAGAGG      8580

ATAGAAGCAG GTCTTTCTCC AAAGAGTCGA GTCGTCCAGA TTTCGCCATC GACTGATTTA      8640

TCAGAGATGA TTGTTAGACT CGCTAGTTCC GTTTCAACAG GATATCCTGT TTGACTGTCA      8700
```

509

```
AAAATGTGAT GGTAATCTTG TCCATCGACG GTCAGGTGAC GTTCATAAAT GCCTGAAGTC    8760

ACGACAGATT TATTGACAAC AGGGATGGTC ATTAAATGAT TTCCCCTAGG ATTGGCTGGG    8820

TCTTGAATCC CGATTTGCCA TGGGTTATCC CCTCTTGCCT GATTTTTTCC AATGGTCAGG    8880

ATATTCCCTC CCAGATTGAT CAAGGCAGAA GTCACCCCCT CTTTCCTAAG AAATTGGGCA    8940

ACCTTATCCG CACTGTATCC TTTGGCTAAA CAACCTAGAT CGATCTTCAT TCCTTTCTGT    9000

TTTAAAAACA CAGTAGAAGT AGAAGAATCT AACTCGATAC CATGAGGATT GATTAGAGGC    9060

AGCACCGATT CAATTTCTTG AGGCTGGGCG ACCTTGGCAT CTGAAAAACC GATACGCCAG    9120

GTTTGAATTA AGGGACCAAT GCTGATATTG AGGTGGCTAG AGAGCGCTAG GCTATGCTCT    9180

AACCCAAGTG AAATCAGCTC AAACAGGTCT GGATGAACCG TGACGGGGGC TATTCCTGCT    9240

TGATAATTGA TTTCCATCAA CTCAGATTCT TGACTATTGG CGTTGAAGCG GTATTCAAGT    9300

TCTTTGAGCA AGTCAAAGGA TTTTTGGAGA AAGATATCGG CTTGCTCATC CACTAATGAA    9360

ATAGTGATAG TAGTCCCCAT TAGCCGTTCA GAATGTGAAC GAAGAGTCAA GCTACCAACT    9420

CCTTTCTCTT ATAGAAAATA AGTTGTAATA TCAAATAATC ATCTAAATTG AAGCCCTTAC    9480

ATTTCATTTT CATGTTATTA TAATACCATA AAGTTAGAAT TTTCACAAAC AAAATTTGGA    9540

AAAAGTCAAG AAATATGCTC ATAAAATTCA TCAGGCTTGA AAACAGGATA AATGGGGAAT    9600

TATTTTTGAT AAAAAATGCT GAAATAATAG TACCCCCCTT GTAAACGCTA ACGGTAAATG    9660

GTATACTAGT AAGGTAAATT TAGAATGAAG GCAGGAAATT TTTATGAGTA AAATCGTTGT    9720

AGTCGGTGCT AACCACGCTG GTACAGCATG TATCAATACC ATGTTGGATA ATTTTGGAAA    9780

TGAGAACGAA ATTGTTGTAT TTGACCAAAA CTCTAACATC TCTTTCCTAG GATGTGGAAT    9840

GGCTCTTTGG ATTGGTGAAC AAAATTGACGG TGCTGAAGGC TTGTTCTATT CTGATAAAGA    9900

AAAATTGGAA GCTAAAGGTG CTAAAGTTTA CATGAACTCA CCTGTTCTTT CAATCGACTA    9960

TGATAACAAA GTAGTTACAG CGGAAGTTGA AGGAAAAGAG CACAAAGAAT CATACGAAPA   10020

ATTGATTTTC GCTACAGGCT CTACACCAAT CTTGCCACCA ATCGAAGGTG TTGAAATTGT   10080

TAAAGGAAAC CGCGAATTTA AAGCAACTCT TGAAAACGTA CAATTCGTGA AATTGTACCA   10140

AAATGCTGAA GAAGTTATCA ATAAACTTTC TGACAAGAGC CAACACCTCG ACCGTATCGC   10200

CGTTGTTGGT GGTGGTTACA TCGGTGTTGA ACTTGCTGAA GCCTTTGAAC GTCTTGGAAA   10260

AGAAGTTGTC CTTGTTGATA TCGTTGATAC TGTCTTGAAC GGTTACTATG ACAAAGACTT   10320

CACACAAATG ATGGCGAAGA ACTTGGAAGA TCACAACATC CGCTTGGCTC TAGGTCAAAC   10380

TGTTAAAGCA ATCGAAGGTG ACGGTAAAGT TGAACGCTTG ATTACTGACA AAGAAAGCTT   10440
```

                                              510
TGACGTGGAT ATGGTTATCC TTGCAGTTGG TTTCCGTCCA AACACAGCCC TTGCAGGTGG   10500

TAAGATCGAA CTCTTCCGCA ACGGTGCCTT CCTTGTAGAC AAGAAACAAG AAACATCTAT   10560

CCCAGACGTT TACGCTGTTG GTGACTGTGC GACTGTTTAT GACAATGCTC GTAAAGATAC   10620

AAGCTATATC GCTCTTGCTT CAAATGCTGT GCGCACTGGT AACGTTGGT   10669

(2) INFORMATION FOR SEQ ID NO: 58:

        (i) SEQUENCE CHARACTERISTICS:
               (A) LENGTH: 7542 base pairs
               (B) TYPE: nucleic acid
               (C) STRANDEDNESS: double
               (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

CGCGCTAATA GATACTTTAT GATAGAATAA AGAACAAGAT TGACAAGTAA GAGGAAACAT   60

TATGCAAAAT CAAACACTCA TGCAATACTT TGAATGGTAT CTGCCCCACG ACGGTCAACA   120

CTGGACGCGT CTGGCTGAAA ATGCTCCACA CCTAGCTCAT CTGGGGATCA GTCACGTCTG   180

GATGCCACCA GCCTTCAAGG CAACCAACGA AAAAGATGTC GGCTATGGGG TCTATGACTT   240

ATTTGACTTA GGAGAGTTCA ACCAAAAAGG GACTGTCCGC ACCAAGTATG GTTTCAAAGA   300

AGACTATCTT CAAGCCATTC AAGCCCTTAA AGCACAGGGA ATTCAACCTA TGGCCGATGT   360

AGTTCTCAAC CACAAGGCTG CTGCCGATCA CAGGGAAGCC TTTCAGGTTA TCGAAGTTGA   420

TCCTGTAGAC CGTACAGTTG AACTTGGAGA ACCCTTCACC ATCAATGGCT GGACTAGTTT   480

TACCTTCGAT GGTCGCCAAG ATACCTATAA TGGCTTCCAC TGGCATTGGT ACCACTTCAC   540

CGGTACAGAC TACGATGCCA AACGCAGTAA ATCTGGGATT TATCTGATCC AAGGGGACAA   600

CAAGGGCTGG GCCAACGAGG AATTGGTCGA TAACGAAAAC GGAAACTACG ACTACCTCAT   660

GTATGCCGAC CTAGACTTTA AACATCCTGA AGTCATCCAA AACATCTATG ACTGGGCTGA   720

TTGGTTCATG GAAACGACTG GTGTAGCTGG TTTCCGTTTG GATGCCGTTA AGCATATTGA   780

CTCTTTCTTT ATGCGCAACT TCATCCGCGA TATGAAGGAA AAATACGGTG ACGATTTCTA   840

TGTTTTTGGT GAATTTTGGA ACCCAGACAA GGAAGCCAAT CTGGACTATC TCGAAAAAAC   900

GGAAGAACAC TTTGACCTTG TCGATGTTCG TCTCCACCAG AATCTCTTTG AAGCCAGTCA   960

AGCTGGCGCA AACTATGACC TTCGTGGCAT TTTCACAGAT AGCCTGGTTG AACTCAAGCC   1020

TGACAAGGCT GTGACTTTTG TCGACAACCA CGATACCCAA CGAGGACAAG CCCTTGAGTC   1080

TACCGTTGAA GAATGGTTCA AGCCAGCAGC CTATGCCCTC ATTTTGTTAC GCCAAGACGG   1140

CCTTCCATGT GTCTTTTACG GAGACTACTA TGGGATTTCA GGGCAGTATG CTCAAGAAGA   1200

511

```
TTTCAAAGAA ATCCTTGACC GCCTCCTAGC CATCCGAAAA GATTTGGCCT ATGGAGAACA    1260

AAATGACTAC TTTGACCATG CTAACTGTAT CGGTTGGGTA CGTTCAGGTG CTGAAAATCA    1320

ATCCCCAATC GCAGTCCTTA TCTCAAATGA CCAAGAAAAC AGCAAGTCAA TGTTTGTCGG    1380

TCAAGAATGG ACTAATCAAA CCTTTGTAGA TTTACTTGGT AACCACCAAG GTCAAGTTAC    1440

AATTGATGAG GAAGGTTATG GACAATTCCC TGTCTCAGCT AGATCCGTAA GTGTCTGGGC    1500

AGTCAATACC ATCTAATAGC TCATAATAAC CAAGCTAGGT CCAAGCGGAT TTGGCTTTTT    1560

TGTATTCACA AAAAGACCTA CCCAAATGGA TAGATCTTTA CTTGATTACA ATTTACCTGC    1620

TACTGCATCC AACAATTCTT GGATCTTAGG TTGGTTGCTT CCTCCTGCCA TGGCCATATC    1680

TGGTTTACCA CCACCACGTC CATCGATGAT TGGTGCTAAT TCTTTGACAA GGTTCCTGC    1740

ATGAAGGTCT TTTGTCTTGC TTGCTACAAG GACATTGACT TTGTCACCGA TAGCGGCAAC    1800

TAGGACAAGA AGATCAGAGT AGTCTTTTTG TTTCCAGTTA TCTGCAAAAG TACGAAGGGC    1860

ACCGGCATCG GATACAGACA CTTGACTAGC AATGTAACGA TGACCGTTGA CTTCCTTAAC    1920

ATCTTTGAAG ATATCGCCTG CGGCTGCAGC TGCGGCTTTT TCTTTCAACT CAGCATTTTC    1980

TTTTTGAAGT TGACGAAGTT GTTCTTGAAG TCCTTCTACC TTGTGAGGTA CTTCCTTGAC    2040

TTGAGGTGCT TTCAAGGTTG CTGCGATAGC TTTAAGAGCA TCCTCTTGTT CACGATAGGC    2100

TTCAAAGGCT TCCTTACCAG TCACTGCCAA GATACGGCGA GTTCCTGAAC CGATTCCTTC    2160

TTCTTTGACA ATTTTGAAGA GACCAATCTC AGAAGTGTTG TCAACATGAG TACCACCACA    2220

AAGTTCAATA GAGTAGTCAC CGATAGTCAC GACACGAACT TCCTTGCCGT ATTTCTCACC    2280

AAAGAGGGCC ATAGCTCCCA TTTCTTTAGC AGTGTCAATA TCCGTTTCAA CTGTCTTCAC    2340

TTCAAGTGCT TCCCAAATTT TCTCGTTAAC TTGCTGTTCA ATCGCACGAA GTTCCTCAGC    2400

AGTTACTGCT TGGAAGTGGG TAAAGTCAAA GCGAAGGAAT TCAACTTCGT TAAGAGATCC    2460

TGCCTGTGTT GCGTGGTTTC CAAGGATATT GTGAAGGGCA GCGTGAAGCA AATGAGTCGC    2520

AGTGTGGTTT TTCATGACAC GGTGACGGCG ATTGCTATCA ATTGCCAAGG TATATTCTTG    2580

GTTCAAGGCA AGCGGTGCAA GGACTTCAAC TGTATGAAGG GCTTGACCAT TTGGGGCTTT    2640

CTGAACATTG GTCACAGTAG CCACAACCTT ACCTGACTCA TCCAAGATTT GTCCGTAGTC    2700

AGCTACCTGT CCACCCATTT CAGCATAAAA TGACGTTTCC GCAAAGATAA GAGAGGCAGT    2760

TCCTTCTGAA ACAGCTCCTA CTTCTGCATT GTCAGCAACG ATAGCTACCA ATTTAGAAGA    2820

CAATTGGCTA GCATTGTAGT TGAAGACACT TTCTACAGTG ATGTTTTGAA GAGTTTCATT    2880

TTGCATACCC ATTGAGCCAC CCTTGACAGC TGACGCACGC GCGCGTTCTT GCTGTTCTTT    2940
```

512

```
CATGGCTGCT TCAAAACCTT CACGGTCTAC AGTCATACCA GCTTCTTCAG CGATTTCTTC    3000

AGTCAATTCA ACTGGGAACC CATAAGTATC ATAGAGTTTG AAGACATCTG AACCAGCGAT    3060

AACAGATTGA CCTTTTTCTT TCAAGTCTGC TACAATGCCT TGGGCAAAGT GTTGACCTGA    3120

GTGAAGGGTA CGGGCAAATG ATTCTTCTTC GCTCTTAACG ATTTTCTCAA TAAAGTCACG    3180

TTTCTCAAGC ACTTCTGGGT AGTAGCTTTC CATGATTTTT CCAACAGTTG GAACCAATTT    3240

GTAAAGGAAA GGCTCGTTGA TACCCAATTT TTGACCATGC ATAGAAGCAC GACGGAGAAG    3300

ACGACGAAGA ACATAACCAC GACCTTCATT TCCTGGAAGG GCACCATCAC CGATAGCAAA    3360

TGAAAGAGAA CGAATGTGGT CTGCGATAAC CTTGAAGCTC ATGTTGTCGC CATCTTGGTC    3420

ATAAACCTTA CCAGACAATT TCTCGACTTC ACGGATAATC GGCATGAAGA GGTCCGTTTC    3480

AAAGTTGGTC TTAGCCCCTT GGATAACGGC CACCAAACGC TCCAAACCAG CGCCCGTATC    3540

AATGTTCTTA TGTGGCAATT CCTTGTATTC GCTACGAGGA ACAGCAGGGT CTGCGTTAAA    3600

TTGTGACAAA ACGATGTTCC AGATTTCAAT ATAACGGTCG TTTTCAATAT CTTCTGCAAG    3660

CAGGCGAAGA CCGATATTTT CTGGGTCAAA GGCTTCCCCA CGGTCAAAGA AGATTTCTGT    3720

ATCTGGTCCA GAAGGTCCCG CACCGATTTC CCAGAAGTTG TCCTCAATTG GAATCAAGTG    3780

ACTTGGATCC ACTCCCACTT CAATCCAGCG GTTGTAAGAA TCTTTATCGT CTGGATAGTA    3840

GGTCATGTAA AGTTTTTCAG CAGGGAAATC AAACCATTCA GGGCTTGTCA AAAGCTCATA    3900

AGCCCAAGTG ATAGCTTCGT CACGGAAGTA ATCCCCGATA GAGAAGTTCC CCAGCATTTC    3960

AAACATGGTA TGGTGACGCG CGGTCTTCCC TACGTTTTCG ATGTCGTTGG TACGGATAGC    4020

CTTTTGGGCA TTGGTAATAC GTGGATTTTC AGGGATAATG GTCCCGTCAA AGTATTTCTT    4080

AAGGGTTGCT ACCCCAGAGT TGATCCACAA AAGAGTTGGG TCATTTACAG GAACCAAACT    4140

TACTGATGGT TCTACTGAGT GACCTTTGGT CGCCCAGAAA TCAAGCCACA TTTGGCGTAC    4200

TTGTGCACTA GATAGTTGTT TCATATTGTC TCCTTATTCA CTTGTTTAAT GTGATTGGCT    4260

TTCCAGCATT TCCACATAGT CAATCGCGAC ACAGAGGGAA ATGACTAGGT CTGCATAAGC    4320

GTCTTCAAGA ACCGTTACGG TATAGGTAGA AGTCAGATGG AAGAGTTCCT TCTTAATTTC    4380

CGCAATCAAC TGATCGCGAT CATCCAGCAA TTTGAAATTC AAATCCCAGA TATTGCCCTC    4440

GATACGAAGA CCTAGATTAT CAAACTCATA CTTATCTCGC CAGAAGGTCA ACTTCTTACG    4500

AATGACAAAA CTCGAGCCAT CCCGAAGCTG AATTTCAAAA CGAGGAAGCA AGGTCAAGAT    4560

TTCTTTACTA ATCTCACTGA CTTGTTCACC AGCCGCATCA TAGATGGTAA AGGTTTTAGG    4620

AATCTTAAAA AATGATCCCT CCACCTGATA GGCAATTTCT CCCCTGTCAT CCTTGATAGC    4680

GAAGCGTTCG CCTCCAAGAC GAAACTTTTG TTTGACAAGA AATGTTTTCA TCAACACCTC    4740
```

513

```
CAAAAATCAA AAGACAAGCT CATATCACGA AGGGCGAAAA ACCGCGGTAC CACCTTCATT      4800

CAATGAACTT GTCATTCTCT TGTTCTTATG CAATTGTATG ATTGAGTAGC ATGACTTCCT      4860

AGCTTAGATG GCTCGCAGCA CCGCCATTTC TCTGGACTAA GACAAGTGAA AATCAATTCT      4920

CAACTTTCTT ATTATAACGT TTTTTTAAGC TTGCGTCAAC TGGAAATGAT CTCCGTTGAA      4980

TTAGACCAAT TCCCTACATC TCTGATTACT TTTTCAGGAT ATATTTTTTC TTACTGCCAT      5040

TTTTCTTTTT ATCCCAAATT TTCATATTAC TAAACACAGC TACTAGAATA TTTCCAAATA      5100

TAAAGGTGCC TATCACCCAA TATATGGACT CAGTTGTTAG GTATTGTCGA TCCAAGCCAT      5160

CCTTTAAATG GAATAGTATA GCAGTTTGGT TAACAATCAT AAAGGTTGGC CAGAAACTTT      5220

TTTTGAAAAA AGTAGACATT TTCATTATTT GTTGCCGCTT TCTGTAAGGT TAATACTCAA      5280

TAAAAATCAA AAAGCAAACT AGGAAGCTAG CCTCAAGCTG TACTTGAGTA CGGCAAGGCA      5340

ACGCTGACGT GGTTTGAAGA GTATAGGCTT AGTATACTAC TAGGCAAGCA AATAAACAAA      5400

TAAACAACTA GAATAGAAAA AGATAGGGCT CTAAAAACTG ACTTCTATTC CTTAAAAACG      5460

AACCAGCTTG ACTGATTCGT CTTCTTACGT TTATCTCCTA CTTCCGATAC ATTTTAAACT      5520

GTAGGAAGAG GTCGCTATAT TTCCCTGTCC ATTTATGGTC AAATTTCTCA TAAACTTCTA      5580

GGTGTTTCAT GGTTTCAACA TCGGGATAGA AGGCCTTATC TTCCTTTGTT TCCTCTGGGA      5640

GCAATTCCTT CGCTGGTAGG TTTGGTGTTG AATAGCCGAC ATACTCCGCA TTTTGGAGAG      5700

CATTTTCAGG TTTCAACATA AAGTTGATAA AGGCATAGGC TGAGTTTTGG TTTTTAACTG      5760

TTTTGGGAAT GACCATATTG TCAAACCAAA GATTGCTGGC CTCTGTCGGT ACCACATAAC      5820

GTAGATTTTC ATTTTTTTCT AACATTTGGC TGGCTTCACC AGAGAAGGTC ACGCCGATTG      5880

CAACATTATT CTGAATCATA TAGCCCTTCA TCTCGTCCGC AACGATAGCC TTGATATTTG      5940

GAGTCAGTTT GTAGAGCTTA TCCACTGTCT CTTCCAACTG CTGCAGATCC TTGGAGTTGA      6000

GGCTGTAGCC GAGGGAATTG AGTCCTAGTC CCAGCACCTC ACGCGCCCCA TCAAAGAGCA      6060

TGATAGAATT CTTATACTCC GGCTTCCAAA GGTCATCCCA ATGCTCAGGC GCTTCATCTA      6120

CCATGGTTTC GTTGTAGACA ATTCCTAAGG TTCCCCAGAA GTAAGGGATG GAGAATTTAT      6180

TACCTGGGTC AAAGGACTGG TTGAGAAACT CTGGTCCGAT ATTTTCGATT CCTTCAATTT      6240

TTGAATAATC AAGCGGAACC AAGAGGTCTT CGTCCTTCAT CTTGTTAATC ATGTATTCAC      6300

TTGGAATGGC AATATCGTAG GTCGTTCCAC CCTGCTTTAT CTTAGTGTAC ATGGCTTCGT      6360

TGGAGTCAAA AGTCTCGTAC TGAACTTGAA TTCCTGTTTC TTCTGTAAAC TGAGTCAAGA      6420

GTTCAGGATC GATATAGTCT CCCCAGTTAT AGATAACCAA TTTTTGACTA TCTCGACTAT      6480
```

514

```
TGATTTTACT ATCTAAATGA GTCGCAATTC CCCACAAGAC AAGGATAATC GCTGCAATTC         6540

CTGCTAAAAA TGAATAGATT TTTTTCATGC TTGCTCCTCC TTCTCACGAG AGATAAAGTA         6600

ATAACCTACA ACTAGGATAA TACTAAAGAG AAAGACTAGA GCAGACAGGG CATTGATTTC         6660

TAAGGAAATC CCCTTGCGAG CACGAGAGTA AATCTCGACT GATAGGGTTG AAAAGCCATT         6720

TCCTGTTACA AAGAAGGTCA CGGCAAAGTC ATCTAACGAA TAGGTGAAGG CCATGAAATA         6780

ACCAGTAATG ATAGACGGAG TCAGGTAAGG AAGCATGATT TCCTTGAACA TCTGAAATTG         6840

ACTAGCTCCC AAGTCATAGG CCGCATGAAT CATGTCGCCA TTCATTTCCT TGAGTCGAGG         6900

CAAGACCATC AAGACCACGA TAGGAATGGA GAAGGCCACG TGACTAGATA GAACGGTCAA         6960

AAAGCCAAGT GAAAACTTGA GTTGGGTAAA GAGAATCAAG AAGCTAGCAC CAATCATAAC         7020

GTCAGGCGCA ACCATGAGGA TATTATTGAG TGATAGAAAG GCTTCTTGGT ATTTCTTACG         7080

AGACTGGTAG ATGTAAATGG CACCAAAAGT CCCGATAATG GTCGCTATCA AGGCTGATAG         7140

GAAGGCCAAG AAAAATGTCT GAGCCAAAAT CAGCATGAGT CTCCCATCTC CAAACATGGT         7200

TTCAAAGTGA GTCCAGCTAA AACCTGTAAA GCTATTCATA TCATCACCAG CATTAAAGGC         7260

ATAGCCAATC AAGTAAAAGA TAGGCAGGTA GAGGACCAGA AAGACCAGTC CCAGATAAAG         7320

GTTGGCAAAT TTTTTCATCG TTCTCTCCTT TCCTTAGTCA CCCACATGGT GATGAACATG         7380

GTCAGGATGA GAATCACACC GATGGTTGAA CCCATACCAT AGTTGTCATT GGTTAGAAAA         7440

TTCTGCTCAA TAGCCGTCCC CAAGGTGATA ACGCGTTCCC ACCAATCAAA CGGGTCAGCA         7500

TGAAGAGACT CAAACTTGGG ATAAAGACCG ACTGAACCCC GG                           7542
```

(2) INFORMATION FOR SEQ ID NO: 59:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 9223 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

```
AAAACCAAAT TCCGGTATTT TAACCTATGC TGTAAATACC ATGAAGTCTG TCATGACAGA          60

TCAGGTCTAT AACATTAAGG TTGAGACAGA AAATGGAAAT TATGTTGGTG AAGCTAGCCA         120

TGTTTTGGTC CTTTTGACAA ATTACTTCGC TGATAAGAAA ATCTTTGAAG AAAACAAGGA         180

CGGCTATGCC AACATTTTGA TTCTGAAAGA TGCCTCTATA TTCTCCAAAT TATCCGTCAT         240

TCCTGATTTA TTAAAAGGGG ATGTTGTCGC AAATGATAAT ATCGAGTATA TCAAAGCGCG         300

TAATATTAAA ATCTCTTCAG ATAGTGAATT GGAGTCAGAT GTTGACGGAG ATAAATCAGA         360
```

515

```
TAACCTACCT GTAGAAATCA AAGTCCTAGC TCAGCGAGTA GAAGTATTTT CAAAACCGAA        420

AGAGGATTAG TATATAGAGA AAGCCTTTTT TAAGGCTTTT TGTATACTTT AAAAGATAGT        480

TCCTTTAACA ACGGACATTC CTTGCAAATA GTTTTACAAA AATAGTATAC TGGATTCATT        540

GAGTTTGAAA ACGTTTGCGT AAAATTTGAA TGAATACTTT AGGAGACAAA TTGATGGAAT        600

TGAGTGCTAT TTACCATAGG CCTGAGTCGG AGTATGACTA TCTTTATAAG GATAAGAAAC        660

TCCATATTCG AATTCGAACT AAGAAAGGGG ACATTGAAAG CATCAACTTG CACTATGGGG        720

ACCCTTTTAT CTTTATGGAG GAGTTTTATC AGGATACAAA AGAAATGGTC AAGATAACTT        780

CTGGTACCTT ATTTGACCAT TGGCAGGTTG AAGTGTCAGT TGACTTTGCA CGTATCCAGT        840

ATCTCTTTGA GCTCAGAGAT ACAGAAGGTC AAAATATTTT GTATGGCGAT AAAGGGTGTG        900

TGGAAAATTC TCTAGAAAAT CTTCATGCAA TTGGGAATGG ATTTAAGTTG CCTTAGCTTC        960

ATGAGATTGA TGCCTGCAAG gTTCCTGACT GGGTTTCAAA TACGGTATGG TATCAGATAT       1020

TTCCTGAAAG ATTTGCCAAT GGCAATGCTC TATTAAACCC AGAAGGGACT TTAGACTGGG       1080

ATTCATCTGT CACACCTAAG AGCGATGATT TCTTTGGTGG TGATTTACAG GGGATTATTG       1140

ATCATATGAA TTACTTGCAA GACTTGGGTA TTACTGGACT ATATCTTTGT CCCATCTTTG       1200

AATCTACAAG CAATCACAAG TACAATACGA CAGATTACTT TGAAATTGAC CGTCATTTTG       1260

GAGACAAGGA GACCTTTCGG GAACTGGTGG ATCAAGCGCA TCATCGTGGC ATGAAAGTCA       1320

TGCTGGATGC GGTATTTAAT CATATTGGTT CGCAATCTCT TCAATGGAAA AATGTCGTCA       1380

AAAATGGTGA ACAGTCTGCT TATAAGGATT GGTTCCATAT TCAACAATTC CCAGTGACAA       1440

CTGAAAAGCT AGTTAATAAG AGAGACTTAC CCTATCATGT TTTTGGTTTC GAGGACTATA       1500

TGCCTAAGCT AAATACAGCC AATCCAGAGG TCAAGAATTA TCTTTTAAAG GTTGCGACTT       1560

ATTGGATTGA AGAGTTTAAT ATCGATGCTT GGCGTTTGGA TGTGGCTAAT GAGATTGACC       1620

ATCAGTTCTG GAAGGATTTT CGTAAGGCAG TTTTAGCTAA AAATCCTGAT CTTTATATCC       1680

TAGGAGAAGT CTGGCATACA TCTCAGCCTT GGCTAAATGG AGATGAGTTC CATGCCGTCA       1740

TGAATTATCC TTTATCTGAT AGTATCAAGG ACTATTCTT ACGAGGAATT AAGAAGACAG        1800

ACCAGTTCAT CGATGAAATC AATGGAGAGT CTATGTATTA CAAGCAGCAG ATTTCAGAGG       1860

TCATGTTTAA TCTCTTGGAT TCACATGATA CAGAGCGAAT CCTGTGGACG GCCAATGAAG       1920

ATGTTCAACT GGTTAAATCA GCCTTAGCCT TTCTCTTTTT ACAAAAAGGA ACACCGTGCA       1980

TTTATTACGG AACCGAGCTA GCCTTGACTG GAGGACCAGA TCCAGATTGT CGTCGTTGTA       2040

TGCCTTGGGA ACGTGTATCA AGTGACAATG ATATGCTGAA CTTTATGAAG AGGCTGATTA       2100
```

516

```
AAATTCGGAA ATACGCGTCA GTAATCATTT CGCATGGCAA GTATAGCCTT CAAGAAATCA      2160

ACTCTGATCT AGTAGCTCTG GAATGGAAAT ACGAAGGACG GATCCTCAAA GCAATATTCA      2220

ACCAATCAAC AGAAGATTAT CTTTTAGAGA AAGAAGCAGT AGCACTAGCA AGCAATTGCC      2280

AAGAATTGGA TAATCAGCTT GTCATCTCTC CAGATGGATT TATGATTTTC TAAAAACTAG      2340

TTGATGAAGA TTATGGTACA TTTCATACCT TATATAGTAT AATAAGGCTA GTTACTAAAC      2400

TTGTAAAGGA GAACTTAAAT GAATTGTAGA GGACATGAAA CAAGACAAAG AATTGTTAGA      2460

GATTTTGAAG TTCAGCCTAA AGCACATATT AAGCTGTTAG CAAATCAACA AAAACATAGT      2520

GATGCAGGAG CAACTATTGA AGATGAATAT TATGTATTTA TCGCTGAGAG TAAAATTGAT      2580

GGCAAGAAGG AAGTTATTCA GTGTTGCATG GGTGCGGCAA GGGATTTTTT AGAACTAATT      2640

AATCACAAAG GGCTACCTCT TTTTAATCCG CTTGTAGGTG ATTCTCATGT AAATAATAGA      2700

CAAGAATATG ACAATACAGG GAGTGGAAAT TTATAACCTG AAAAGTGGAA TGAAACTGCA      2760

AAGCAGCTTT ATAATGCTAT AATGTGGTTG ATTATTTTAT GGAATGCTAA GCCGGATACA      2820

CCTTTATTTA ATTTTAAAGA CGAAGTAATT AAGTATAAAA CATATGAGCC TTTTGAAAGC      2880

AGTATAAAAA GAGTAAATAC TACTATAAAG AATGGTAGTA AAGGGAAAAC TCTGACTGAG      2940

ATGATTAATG GCTACAGAGC GGATAACGAT ATTAGAGATG AAATTTGTAA CTTTAATATT      3000

CTGAAAAATA AAATTCGTGA TATGAAAAAC CAACAAGGAA ATACAATGGA ATCTTACTTT      3060

TAGTTATTGT TGAATTTTGG GTATTCTATA AAATATCCTA ATTGAGATTT AAATAGTAGA      3120

CTATACAATA TAGTTAAAAT ATCAGTAAAA ACAACACTTT ATTGAGGTAT TGGATACGCT      3180

TTGCTAATAG CCTAATAATC ACATGTGGAG TGTTGCTACA ACGAAAAAGG TGATAATCCT      3240

TGATTTCAAG CTATTTTATA AGCATTTTGT CTTTGTAGAT AAAGGCAATT TTGACAATAA      3300

AAATCCTAAA AGGTGAATCG TTATAGATGT ATTTGTAGAT ATCGTTTGCG CATCGAAAAA      3360

ATTAATACAA GAATAAATAT TTATAGCTCT TTAGGTGACT TTTATAGAAG TAAAGTTTAG      3420

GATAGAAAAA CAAGAAATAA CGCACCATTT TTGGTGCGTT ATGCTTTTTT ATGCTATAAT      3480

GGATTTATAA AAATAAAGGA GTTTGCTATG ATTGGAAAGA ACATAAAATC CTTGCGTAAA      3540

ACACATGACT TAACACAACT CGAATTTGCA CGGATTGTAG GTATTTCACG AAATAGTCTG      3600

AGTCGTTATG AAAATGGAAC GAGTTCAGTC TCTACCGAAT TAATAGACAT CATTTGTCAG      3660

AAGTTTAATG TATCTTATGT CGATATTGTA GGAGAAGATA AAATGCTCAA TCCTGTTGAA      3720

GATTATGAAT TGACTTTAAA AATTGAAATT GTGAAAGAAA GAGGTGCTAA TCTATTATCT      3780

CGACTCTATC GTTATCAAGA TAGTCAGGGA ATTAGCATTG ATGATGAGTC TAATCCTTGG      3840

ATTTTAATGA GTGATGATCT ATCTGATTTG ATTCATACGA ATATCTATCT AGTAGAAACT      3900
```

517

```
TTTGATGAAA TAGAGAGATA TAGTGGCTAT TTGGATGGAA TTGAACGTAT GTTAGAGATA        3960

TCTGAAAAAC GGATGGTGGC CTAATGGAAA TCCAAGATTA TACTGATAGT GAATTCAAAC        4020

ATGCTTTAGC AAGGAATCTT CGTTCACTGA CAAGAGGAAA AAAGTCCAGT AAGCAACCTA        4080

TAGCGATTTT GCTTGGAGGG CAAAGTGGTG CCGGTAAGAC TACAATTCAT CGTATTAAAC        4140

AGAAAGAATT TCAAGGAAAT ATTGTTATCA TAGATGGTGA TAGTTTTCGT TCTCAGCATC        4200

CACACTATTT AGAACTGCAG CAAGAATATG GCAAAGACAG TGTAGAATAT ACCAAAGATT        4260

TTGCAGGAAA AATGGTAGAG TCTTTAGTAA CAAAATTGAG TAGTTTGAGA TACAATCTTT        4320

TGATAGAGGG AACTTTACGA ACAGTTGATG TTCCAAAGAA AACAGCACAA CTCTTGAAAA        4380

ATAAGGGATA TGAAGTACAA TTGGCCTTAA TTGCGACAAA GCCTGAATTG TCGTATCTAA        4440

GTACTCTTAT CCGTTATGAA GAACTGTACA TTATCAATCC AAATCAAGCA CGCGCAACTC        4500

CAAAAGAACA TCATGATTTC ATTGTAAATC ATCTAGTTGA TAACACACGA AAAATTGGAAG       4560

AACTAGCTAT CTTTGAAAGA ATTCAAATTT ACCAACGAGA TAGAAGTTGT GTATATGATT        4620

CAAAAGAAAA TACAACTTCA GCAGCAGATG TTCTTCAAGA GTTACTCTTT GGGGAGTGGA        4680

GTCAGGTAGA GAAGGAGATG TTGCAGGTGG GGGAAAAGAG ACTTAATGAA TTACTTGAAA        4740

AATAAACAAT TGATATTTTT AGGAGAATAG AAATGAGAGG GTTTAATAAC AAGATAAAGT        4800

CTGTTTATCA AGAACTAACA AATTCCAAAG AGAAATTCGG TAGCTTTCAC AAGACTTTAA        4860

TTCATTTCCA TACACCTGTT TCTTATGATT ACAAGCTATT TTCTAATTGG ACTGCAACGA        4920

AATATAGAAA AATTACTGAA GATGAACTAT ATGATATATT TTTTGAAAAT AAGAAAATAA        4980

AAGTTGATAA GACAATTTTT TTTAGTAATT TTGATAAGGT TGTTTTTTCT AGTTCAAAAG        5040

AATATATTAG TTTTCTTATG TTAGCAGAGG CAATCATAAA AAATGGAATA GAAATAGTTG        5100

TAGTAACTGA TCATAATACT ACCAAAGGTA TTAAAAAGTT ACAAATGGCA GTCTCAATCA        5160

TAATGAAAAA TTATCCGATT TATGATATAC ATCCTCATAT TTTACATGGA GTAGAAATTA        5220

GTGCAGCAGA TAAATTGCAT ATTGTATGTA TATATGATTA TGAACAAGAA TCATGGGTTA        5280

ATCAATGGTT AAGTGAAAAT ATTATAAGTG AGAAAGATGG AAGTTATCAA CATTCACTGA        5340

CTATAATGAA GGATTTCAAT AATCAAAAAA TAGTTAACTA TATTGCTCAT TTCAATAGTT        5400

ATGACATTTT GAAAAAAGGT TCTCACTTAT CAGGTGCATA TAAACGAAAA ATTTTTTCTA        5460

AAGAAAATAC ACGATTTTGG AGTTTAATAT TAACTCGAAA GAATCTTCGC AACAACTTGA        5520

TATTCTCTAT AAAGAAGTTG GTGTATTAAG TTTGGGACAA AAAGTTGTAG CCATGCTTGA        5580

TTTTTTATTA GCATATAGTG ATTATTCTAA AGACTTCAGA CCATTGATTA TTGATCAGCC        5640
```

518

```
TGAAGACAAT CTAGACAATC GTTATATTTA CAGGCATTTA GTTCAGCAGT TTAGAGATGT        5700

GAAAGCTCAA CGTCAAATTA TTTTAGCAAC ACATAATGCT ACAATTGTAA CAAATTCTAT        5760

GACAGATCAA GTTGTTATTA TGGAGTCAGA TGGAGTTAAC GGATGGATTG AATCACAGGG        5820

ATATGTTAGT GAAAAATATA TAAAAAATCA TATCATCAAT CAATTAGAGG GAGGAAAAGA        5880

TTCCTTCAAG CATAAAATGT CTATATATGA GACGGCTTTA TCAGAGTAGA GTCAGAAAAA        5940

GTAGGTTAGA AAATTTAGCCT ACTTTTTTCT TTGTCCGACA GGCATAGTGT ACATCTGAGG       6000

TCCAAGTCCT CTGTGGATAT TTGCTGCAGA TGAAACCAAT AGCGACTCCT AAGCCTGAAT        6060

ATCGTGAGGT AGGGGGGATA GGAAGGAATT AGCGAAATCA AGGTTCTACA AACAGAATCG        6120

TGACTTGAAG CCATATATAG CGGATGAGGA ACTCTAAAAT CCAAATAGGT GTCGTAACCT        6180

ATATACGTAA ATTACGAGAG TAAACTAGGA AAGATGTACG GCTTATTCCG TGAGCGTTTA        6240

GGACGTAGTA CAACGAATCA TGGGAGTCAG CTGAACACAT AGTATTGAAG AAATTTCTGT        6300

AATGGAAATG GAGCGAAGAA GTGAACAATT AAATGAATAC CTCTCTAATT AAATTTGTCA        6360

ATTCTAATTC CTGGTATGAA AAGACAGTGA CCTGAAAATG TAAACGATGG GAGCTGATCA        6420

TAAATATAGG ACGGTACATG CAGTGGTGTT AGAGATTAGT CCTTACTTGA TTTGTGATAA        6480

CTTCCCCAAA TTTCTTCTGC TATACTTTTC TCAACTTTTA AAAATCCAAC TAAGAATTTT        6540

ACCTGGGGGT TTGGGGGCGG AGCACTAAGT TATCTTATCG TTAGCTGTCA AAACTGGTAG        6600

GTTTTGATAG GCTGGCGATA TGATTTTTGG GATATTGTGG ACACAATATC TGAGCTCGCA        6660

AAGCCTTACA AGAATGAAAA TCAGTTGTTG GAAAAGTGTA CTGACATTGT ATGGTAGCTC        6720

ACATTGTCAG TACAAGTATT TTGGAAAGGA AGTAGCAGTA TGAAACGAGA TGTGCGTGAT        6780

ATTCGGAAAC AATTTCGTTT AACAGAAGCA GAAGAAAAGC AAATTCTAGC TTTGATGAGA        6840

GAGCGGGGAG AGACTAATTT CTCTGATTTT CTTCGTAAAA GTTTACTTTC CTCTGATTTA        6900

CAAAAACAGA TGGAGACATG GTTTGCCCTC TGGCAATCCC AAAAACTAGA ACAAATCAGT        6960

CGTGACGTTC ATGAAGTTTT AATCTTGGCA CAGTCAGAAC GTCAAGTCAC CCAAGAGCAT        7020

GTATCTATTC TCTTAACGTG CGTGCAGGAA TTGATTCAAG AGGTTGCAAA CACCATACCC        7080

CTCAGTAAAG AATTTCGTGA GAAGTACATG AGGTAAGCAC ATGGAACATC GTTACCGAAC        7140

CAATCTCAAG AAAGTGTTTT TGTCTGATAG TGAGTTGAAC CAACTAAATA TAAATATCGA        7200

TCAAAGTGGT TGTAAATCCT TTTCTGAATA TGCGAGACGA ACTCTACTCG ATCCTGGTAT        7260

GAATTTTATC ACGATTGACA CAAACGGTTA CCAAGATTTA GTGTTTGAGT TAAAGAGGAT        7320

TGGCAATAAT ATCAACCAGA TTGCTCGAAG TGTTAATCAA TCTCAGTTAA TTTCTGGTGA        7380

AGAATTGCAG GAGTTGAAAA AAGGAATTGG TGAATTGATA AAAGAAGTTG ATAAGGAATT        7440
```

519

```
TAATCTGCAA GCGCAGAAGC TAAAGGAGTT CCATGGTCAT CACTAAACAC TTTGCCATTC    7500

ACGGAAAGAG TTACCGCAGA AAGCTTATCA AGTACATTCT CAATCCTGAG AAAACCAATA    7560

ATCTTGCCTT GGTGTCGGAC TATGGCATGA AGAATTTTCT GGACTTTCCT AGCTATGAGG    7620

AAATGGTGCA GATGTATCAT GAAAATTTCA TCAGCAACGA TACGCTTTAC GATTTTCGCC    7680

ACGACAGGAT GGAAGAAAAT CAACGAAAAA TACACGCTCA CCACATCATT CAGTCTTTCT    7740

CGCCAGAGGA TCATATCACT CCTGAACAAA TCAATCGGAT AGGTTATGAG ACTGTGAAGG    7800

AATTAACTGG TGGCAAATTT CGTTTTATCG TTGCGACCCA TGTTGATAAA GACCACCTGC    7860

ACAATCACAT CATTATCAAT TCAGTAGATA GCAATTCTGA CAAAAAGCTC AAGTGGGACT    7920

ACAAGGTGGA GCGAAATCTT CGCATGATTT CTGACCGTTT TTCTAAAATC GCAGGTGCTA    7980

AAATCATTGA GAACCGCTAT TCTCACCAGC GGTATGAAGT CTATCGTAAG ACTAATCACA    8040

AGTATGAACT CAAGCAGCGA CTCTATTTTT TGATGGAACA TTCTAGGGAC TTTGAGGATT    8100

TCAAAAAGAA TGCTCCGCTA CTACATGTGG AGATGGATTT CCGTCACAAG CATGCCACCT    8160

TTTTTATTAC GGACTCAACT ATGAAACAGG TGGTGCGTGG CAAGCAACTC AATCGCAAGC    8220

AGCCTTACAC AGAAGAATTT TTTAAGAACT ACTTTGCCAA AAGAGAAATA GAAAGTCTCA    8280

TGGAATTTTT ATTGCTGAAA GTTGAGAATA TGGATGATTT ACTTCAGAAA GCAAAACTTT    8340

TTGGACTAAC TATCAATCCT AAACAAAAGC ATGTTTCTTT TCAATTTGCA GGAGTGGAGG    8400

TAAAGGAGAC AGAGCTAGAC CAGAAAAATC TTTATGATGT AGAGTTTTTC CAAGATTATT    8460

TTAAAAATAG AAAAGATTGG CAAGCTCCAG AAACTGAGGA TTTCGTTCAA CTTTATCAAG    8520

AAGAAAAGTT ATCCAAAGAA AAAGAACTTC CAAGCGATGA GAAGTTCTGG GAGTCCTATC    8580

AAGAGTTCAA GAGTAACAGA GATGCCGTTC ATGAATTTGA GGTGGAGTTG TCACTCAATC    8640

AAAATTGAAAA AGTAGTGGAT GATGGAATTT ACGTCAAGGT CAAGTTTGGT ATTCGTCAGG    8700

AGGGACTTAT CTTTGTGCCG AACATGCAGC TTGATATGGA AGAGGATAAG GTGAAGGTTT    8760

TCATCAGGGA AACCAGCTCC TACTATGTCT ACCACAAAGA CGCTGCCGAG AAAAATTGTT    8820

ATATGAAAGG TCGAACCTTA ATTAGACAGT TCAGCTATGA AAATCAAACC ATTCCATTAC    8880

GCAGAAAAGC GACAGTCGAT ATGATTAAAG AGAAGATTGC GGAAGTGGAT GCTTTGATTG    8940

AACTGGAAGT AGAAAATCAA TCTTATGTCA CGATTAAAGA TGAGTTAGTG CATGAACTAG    9000

CAGCGTCTGA ATTGAGAATC AATGAGTTGC AAGAACGAAT GTCAACCTTG AATCAAGTAG    9060

CAGAATATCT ACTGGCTTCA GTTGAAAGTA AGCAAGAAAT GAAATTAAAT CTTTCAAAAC    9120

TGAATATAAC TGAGAATATC AGTGCTAATA TTGTTGAGAA AAAATTGAAG AGCCTGGGGA    9180
```

```
                                   520
ATCAACTGGA ATTGGAAAGG GGCAGGTATG AAAAGATGGT AGT                        9223
```

(2) INFORMATION FOR SEQ ID NO: 60:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 6827 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

```
TCTGCTGGCT ACCATCATCT GACTTGGGCA AGACCAAAGT CTTAGTTACA ACTGTATTCT        60

TCTCAGCATT TTCAATAACT GGCAATGCCG ACTGAAGCGT ATCTTTTTCT GTTTTTGTAG       120

CTGGTCCAGT TTCTTTTTTC TGTCCGCAAC CAACCAGGAC AAAAAGGAAA GCTAGACTAA       180

CAAGAACTAT TTTTTTCATT TCTTTCTTCT TTCTTTTTGA AATTAAAATA GAATAAGACT       240

GGGAAGTGCT CCCAGCCTTG ATGTTTATAG AGCTGCACGC AAACGTGCTT CTGCATTTTC       300

TACATTACGG ACAGAGCGTG GTAGGAAGGC ACGAATATCG TCTTCCTTGT AGCCAACTTG       360

CAGGCGTTTT TCATCTACAA GGATTGGGCT CTTTAAAATT CTCGGTGTTT CCATAATCAG       420

ATTGAGAACT TCATTGACAC TCAAATCTTC AATATCCACT CCAAGGGCTT TGGCATAGCG       480

ATTTTTAGAC GAAACGATGC TGGCTATTCC GTTATCTGTT TTGGTTAGAA TATCCAGTAA       540

TTCTTCTCTC GTAATTCCTT CTTTACCAAG GTTTTGTTCT TTATAACTTA ACTGGTGGGC       600

ATTGAGCCAG GTTTTTGCTT TTTTACAGCT AGTACAACTT GAGACTGTAT AAATTTTAAT       660

CATGTACCTA CCCCTTTCGC TACATGTTAC TATCAGTTTA GTCTATTATA CCATAAAAAA       720

CATCCGACTT GCGACCTATT TTTAATTTTT TTTGACTTTT TTCGTCATTT TCGTACTTTT       780

TTCTTGACAA ACAACTAAAT GACTATCAAC TCTTTTGGAG CTAGGGTCAA TAATTCACAA       840

CCTGTCTCTG TAATCAGGAT ATCATCCTCG ATACGAACGC CATATTTGCC TTCGATATAG       900

ATACCTGGTT CATCGGTCAA GGCCATACCT GTCTTAATAG TTTCTGTAGA AGTCTGACTA       960

AAGTAGGGTT CCTCATGGAT ATCCAGACCA ATACCGTGGC CAATGCCGTG AGTAAAGTAG      1020

TCACCATAAC CTGCCTCAAT GATAATATCA CGAGGGATTT TGTCAAAGTC ACGGAAACCT      1080

AAGCCTGCCT TAGCTTGGTC AATCAAGGCT TGGTTAGCTT TTAGAACCGT ATTGTAAATC      1140

TCTGCCTGCT CATCGCTAAC ATGCCCTAGA TAGATAGTCC GGGTCATATC ACTGACATAG      1200

TGGTCATAGA GACAGCCGAA GTCCATGGTG ATGGCTTCTC CCAACTCCAC TGGTTTGTGC      1260

ATTGGATGGG CATGGGGTTT AGAAGAATTG ATACCGCTAG CTAGGATCGT ATCAAAAGAT      1320

AAGCCAGATG CTCCCAACTC ACGCATGCGG AAATCAAGGA AGTTGGCAAT CTCAATTTCA      1380
```

521

```
GTTTTTCCTG GTTTGATAAA GTCAAGCGCA TCGCGGAAAG CTTGGTCTGA GATAGAACAA      1440

GCCTTGCGAA TCGCTGCAAT CTCTGCCTCA TCCTTAATCA TACGAAGACC TTCCACAAAC      1500

TGAGTTTGTG GAAGCAAGTT CAAACCTGCA AAAGCTGCCT GCATACGGTG GTAATAAGAC      1560

ACTGAAATCT CATCTTCAAA ACCGATACGA GTCAAGCCCA TGTCCTTAAC AATTCCTGCA      1620

ATGACAGCCA ATTCATCACG ATCAGCCACA ATCTCAAAAC CACTGGTTTC TTGCTTAGCT      1680

GCGATGATAT AGCGAGAGTC TGTCACTAAG ACCTGACGGT CACGACTGAT AAAGACTGTT      1740

CCGTTTGAGC CCCAAAAACC AGTCAAATAA TAGACGTTTT TAAGATTGTT GATGATGATA      1800

CCATCTAGTT CTTTTTCTTG CATTTTAGCT AGAAATGCTT GTACGCGTTT ATTCATGATG      1860

TAACTTTCCT TTCAAATAGT GTCCTGTATA GCTGGCTTCG TTGGCAGCTA CTTCTTCTGG      1920

AGTTCCTGTT ACGATGATGG TTCCACCACC GACACCGCCC TCAGGTCCCA AGTCAATGAT      1980

ATGGTCTGCC GTCTTGATAA CATCCAGATT GTGCTCGATG ACGAGGACTG TATTGCCATC      2040

GTCTACAAAG CGAGCTAAAA CCTTGAGCAG GCGAGCAATG TCCTCTGTAT GAAGCCCTGT      2100

CGTCGGCTCA TCCAGAATGT AGAAAGATTT TCCTGTCGAT CGTTTGTGGA GTTCGCTAGC      2160

TAACTTCATA CGTTGGGCTT CTCCCCCAGA AAGGGTGGTA GCTGGCTGTC CCAAGGTCAC      2220

ATAGCCTAGC CCTACATCCT TGATGGTCTG GAGTTTGCGT TGAATTTTCG GAATGTGTTG      2280

GAAAAATTCT ACCGCATCGT TGACCGTCAT ATCCAAGACC TGCGAAATAT TCTTTTCCTT      2340

GTAGTGAACT TCTAGGGTTT CACTGTTATA GCGGGTTCCG TGGCAAACTT CACAAGCCAC      2400

ATAAACATCT GGCAAGAAGT GCATCTCAAT CTTGATAATC CCGTCACCTG AGCAAGCTTC      2460

ACAGCGACCT CCCTTGACGT TGAAACTGAA GCGCCCCTTC TTGTAGCCTC GAATCTTGGC      2520

TTCATTTGTC TGAGCAAAAA GGTCACGTAT ATCGTCAAAA ACTCCTGTAT AGGTAGCTGG      2580

GTTAGACCTC GGCGTCCGTC CGATAGGGCT CTGGTCAATA TCAATCAAAC GGTCGACATG      2640

CTCAATCCCT GTAATAGTCT TAAACTTACC AGGTTTGTCT GAATTACGGT TGAGCTTCTG      2700

GGCAATGGCT TTTTTGAGAA TGCTGTTGAT TAGAGTCGAT TTCCCTGAAC CCGACACACC      2760

TGTCACTGCG ATAAATTTTC CTAGTGGAAA GCGAGCCGTG ACATTTTGCA AGTTGTTCTC      2820

ACGCGCTCCT ATCACTTCAA TAAAACGACC ATTTCCGACA CGGCGCTCTT CTGGTACTGG      2880

GATGACACGT TTGCCTGACA AGTACTGACC TGTGATAGAC TTGCTGTTGC GAGCCACTTG      2940

CTTAGGTGTA CCTGCTGCAA CAATCTCACC ACCAAAAACA CCGGCACCAG GACCAACGTC      3000

AATCAGATAA TCAGCCTCAC GCATGGTATC TTCGTCGTGT TCCACCACGA TAAGAGTATT      3060

GCCCAAGTCA CGCATCTTTT TCAGACTGGC AATCAGGCGA TCATTGTCCC TCTGGTGAAG      3120
```

522

```
ACCGATTGAC GGCTCGTCTA GGATATAGAG GACACCTGAT AGGTTGGAAC CAATCTGGGT      3180

TGCCAAACGA ATGCGCTGAC TTTCCCCACC TGAAAGGGTT CCTGCTGAAC GTGACAGGGT      3240

TAGATAGTTA AGACCCACAT TATTAAGGAA GGTCAAACGA TCCTTGATTT CCTTGAGAAT      3300

GGGACGAGCA ATGATGGCTT CATTTTCAGA CAAAGTTAAC TGGCTCACCA AGTCCAAGTG      3360

GTCAGCGATA GACAGGTCTG AGATTTCTCC AATATGTGGC CCTTGCTGGC CGCCCACACG      3420

GACAGACAAG GCCTGGTCAT TGAGACGATA GCCTTGACAG GTTCCGCAGG TCAGCTCATT      3480

CATGTAGAGA CGCATCTGAG TGCGAGTGTA ATCGCTATTG GTTTCATGGT AACGACGTTT      3540

GATATTATTG ATAACTCCCT CAAACGGAAT GTCGATATCG CGCACGCCAC CAAATTCATT      3600

CTCATAGTGG AAATGGAATT CCTTACCATC TGACCCATAG AGAATCAAGT TCTTATCTTC      3660

TTCTGACAGG TCCTCAAAAG GCTTATCCAT AGCCACTCCA AAGACTTTCA TGGCCTGCTC      3720

TAACATGTTT GGATAGTAGT TGGATGAGAT AGGATTCCAA GGTGCTAGCG CTCCCTCACG      3780

TAAGGTTTTG CTAGCATCTG GCACTACCAA ATCAGTATCC ACCTCCAGCT TGATGCCCAA      3840

GCCGTCACAC TCACTACAAG AGCCAAAAGG AGCATTGAAA GAAAAGAGAC GAGGCTCTAA      3900

CTCTGGGACA GTAAAACCAC AAACTGGACA GGCATAATGC TCAGAGAACA ACAACTCCGA      3960

GTCGTCCATG GTGTCGATAA TGACATAACC TTCTGCAATA CGAAGGGCAG CCTCAATGGA      4020

ATCAAAGAGA CGACTACGAA TGCCCTCCTT GATAACAATA CGGTCAACCA CGACATCGAT      4080

ATTGTGTTGC TTGCTCTTAG ACAACTCTGG CACTTCGGTC ACATCATAGA CTTCCCCATC      4140

CACACGGACA CGAACATACC CGTCTTTCTG AACCTTCTCG ATAACACTCT TATGTTGGCC      4200

TTTTTTCTTG CGGATGACAG GAGCCAAGAT CTGCAAGCGC TGGCGTTCAG GTAACTCCAA      4260

AACCTTATCA ACGATTTGCT CCACAGAAGA AGCATTGATA GCTCCATGTC CGTTGATACA      4320

GTAAGGCGTC CCCACACGTG CGTAGAGGAG ACGCAGATAG TCATTGATTT CAGTCGTCGT      4380

TCCCACCGTC GAGCGAGGAT TTTTACTAGT CGTTTTCTGG TCGATGGAAA TAGCTGGGCT      4440

GAGACCATCA ATGGCATCTA CATCTGGTTT TTCCATATTT CCCAAGAACT GACGAGCGTA      4500

GGCGGACAAA CTCTCTACAT AGCGACGTTG TCCCTCCGCA TAGAGAGTAT CAAAAGCCAG      4560

ACTGGACTTC CCTGAACCTG ACAAGCCAGT CACGACAACC AACTTGTCTC GCGGAATCTC      4620

CACATCAATA TTTTTTAAAT TATGGGCACG CGCCCCATGA ATGACAATTT TATCTTGCAT      4680

CTTTGTTCTT TCTAGTCCAT TATTGCTTAC CATTATACCA AAAAAAGTGA GATTCTATTA      4740

CCCAAAAGGC CGATTTTGTA GTATAATAGT ACAGTGTGAA AAAATCTGAA AAATGAGAAA      4800

GGATAAGGGA TATGAAACAA GTTTTTCTCT CTACAACAAC TGAATTTAAA GAGATCGATA      4860

CGCTTGAACC GGGTACTTGG ATCAATCTCG TCAATCCGAC TCAAAATGAA TCACTCGAAA      4920
```

523

```
TCGCCAACAC CTTCGATATT GATATTGCTG ACCTTCGAGC ACCGCTCGAT GCGGAAGAAA      4980

TGTCTCGTAT TACCATTGAA GACGAGTATA CCCTGATTAT CGTAGACGTG CCGGTCACGG      5040

AGGAAAGAAA TAACCGCACC TACTACGTAA CCATCCCGCT TGGTATTATC ATCACTGAGG      5100

AAACCATTAT CACTACGTGT TTGGAACCAC TACCTGTCCT TGATGTCTTT ATCAACCGTC      5160

GATTGCGTAA TTTCTATACC TTCATGCGTT CACGTTTTAT CTTTCAAATT CTTTATCGCA      5220

ATGCAGAGCT TTACCTAACA GCCCTTCGTT CAATCGACCG CAAGAGTGAA CAAATCGAAA      5280

GTCAACTGCA TCAATCAACT CGTAATGAAG AATTGATTGA GCTCATGGAA TTGGAAAAAA      5340

CTATCGTCTA TTTCAAGGCC TCCCTCAAAA CAAATGAGCG CGTGATTAAG AAATTGACCA      5400

GTTCAACCAG CAATATCAAG AAATACCTTG AGGACGAAGA CCTGCTTGAA GACACCCTGA      5460

TTGAAACCCA ACAGGCCATC GAGATGGCAG ATATTTATGG AAACGTCTTG CATTCTATGA      5520

CAGAGACCTT TGCCTCTATC ATTTCTAACA ACCAGAACAA CATCATGAAA ACCTTGGCCC      5580

TTGTGACCAT CGTCATGTCC ATCCCAACCA TGGTCTTTTC TGCCTACGGG ATGAACTTTA      5640

AGGATAATGA AATCCCCCTA AACGGAGAGC CAAATGCCTT CTGGTTAATC GTCTTTATCG      5700

CCTTTGCTAT GAGTGTCTCG CTCACTCTCT ATCTCATCCA TAAAAAATGG TTCTAAGAGG      5760

AGTTCCTATG TCTCAAATTG ATCTACAAAA ATtAACTAAG AAAAACCAAG AGTTTGTCCA      5820

CATTGCTACC CAACAATTCA TCAAAGATGG GAAAACAGAC GCTGAAATCC AGACTATTTT      5880

TGAGGAAGTC ATTCCCCAAA TCCTTGAGGA GCAATCTAAA GGTACAACTG CCCGTTCCCT      5940

ATACGGCGCA CCAACTCATT GGGCTCATAG CTTCACTGTC AAAGAGCAGT ACGAAAAAGA      6000

GCATCCAAAA GAAAATGATG ACCCAAAACT GATGATTATG GACTCAGCTC TTTTCATCAC      6060

TAGCCTCTTT GCCCTTGTCA GCGCCCTCAC AACCTTCTTT GCGGCAGACC AAGCTTTCGG      6120

CTATGGATTG ATTACTCTTC TATTAGTTGG ACTGGTTGGT GGATTTGCCT TCTACTTGAT      6180

GTACTACTTT GTTTACCAAT ACTATGGACC AGATATGGAT CGCAGTCAAC GTCCACCTTT      6240

CTGGAAATCT GTACTAGTTA TCCTAGCTTC TATGTTCCTT TGGTTGCTTG TCTTCTTTGC      6300

AACAAGCTTC CTACCAGCTA GCCTTAACCC AGTACTGGAT CCATTGCCAC ·TAGCTATTAT      6360

TGGAGCAGCC CTCCTAGCCC TTCGCTTCTA TCTCAAGAAA CGCTTGAATA TCCGTAGTGC      6420

AAGTGCAGGA CCAACACGCT ATCAAGAATA AGAAAACGAT AAAAGCAACT GCAGGTGCGG      6480

TTGCTTTTTC ACTTACTTTT TTGAGTTATA TTCAATGAAA ATCAAAGAGC AAACTAGGAA      6540

GCTAGCTGCA GGTTGCTCAA AGCACAGCTT TGAGGTTGCA GATAAAACTG ACGTGGTTTG      6600

AAGAGATTTT CGAAGAGTAT TAAAAGTATT CTTCTGAAAT CCCACATAGC TTTCTCTTAT      6660
```

524

```
ATTTTGTGAT AAAATAGGCT CAATCTATTT CTAGGAGGAT GAGATATGGT TTCTACTATT        6720

GGTATTGTTA GTTTATCTAG TGGCATTATC GGAGAGGATT TTGTCAAACA CGAAGTGGAC        6780

TTGGGTATCC AACGTCTCAA GGATCTGGGA CTCAATCCCA TCTTTTT                      6827
```

(2) INFORMATION FOR SEQ ID NO: 61:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 11864 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

```
CTGGCTAGTT GCATAGAGCA AAGTTGCTTC TTCATCAACA AAACCGTTCA TTTCAAAATA          60

GGAAAGCAGC TCATCAGGAC TCTCCAAACG AATCCCTTTG TAATCCAGCT CAACTGCCAC         120

CTCTTTCAAG GCTGCAAGAA GAAGTGTTCC CAGGCCCTGT CTCTGATGGT CAAACTCGAT        180

GACTAAAGAA TGTACTTTTA GACATTGCGG ATTGTCTGAC TGGGGACTTG ATAAAATATA        240

GCCTAAAAGT TGATTTTCAT CCCTAGCTAG AAGAAAGGTA TCCGCACACT TACGGATACT        300

TTCTTCTAAA ATATGGGAAA GTTGCTGCTT TTCAGCTGGA AAAGACGAGG TCTGAAGTGC        360

CCCTATCTCA GGCAAATCAG ACTTGCTTGC CTGAATGATC TTAATTGGAA TTTCCATGGG        420

AACATCCTAT TGAACATTGC TTGTCAAGTT AGACAAGAGA CGCTCAAATG AGTATTCATA        480

GGTTTGGATG TCTCCTGCTC CCATAAAGAC GTAAACAGCA TTGTCATGGT CTAGGAGTGG        540

AGAAACATTT TCAACAGTAA TCACTTGGTG TTTTTTGTTG ATTTTGTTGG CTAGGTCTTC        600

TACCTTAACG TCACCATGAT CTACTTCACG AGCCGAGCCA TAAATTTGCG CTAGATAAAC        660

AGCATCTGCT TGGTTTAAAG CATGGGCAAA GTCGTCCAAC AAGGCAATGG TTCTTGTAAA        720

GGTATGCGGT TGAAAGACTG CTACAATTTC CTTGCTTGGG TATTTCTGAC GAGCCGCATC        780

CAAGGTCGCA ATAATTTCTG TTGGATGGTG GGCAAAGTCA TCGATAATCA CTGTATCATT        840

GACAATTTTC TCAGTGAAAC GACGTTTAAC ACCGGCAAAT GTTTTCAAGT GCTCACGCAC        900

CAAGTTCAAA TCAAATCCTG CTGTGTAAAG AAGACCAATA ACGGCTGTCG CATTCATGAT        960

ATTGTGACGA CCAAAGGTTG GAATGTGGAA TTGCCCCAAG TTTTGTCCAC GGAAATGAAC       1020

GGTGAAGGTT GAACCAGTTA TTGAACGAAG AAGATCACTA GCTACAAAGT CATTGCCTTC       1080

AGCTTCAAAA CCATAATAAT AAATTGGTGC ATCAGACGTA ATCTTACGCA ATTCAGCATC       1140

TTCACCATAG ACAAAAAGAC CCTTGGTGAT TTGTTTGGCA TAGTCGTTAA AGGCATTAAA       1200

AACATCCTCG AGACTTGTGA AATAATCTGG ATGGTCAAAG TCAATGTTGG TGATAATAGA       1260
```

525

```
GTATTCTGGG TGGTAAGGCA TGAAGTGACG CTCATATTCG TCAGATTCAA AGACAAAATA        1320

TTTGGCATTG GCCGAACCAC GACCTGTCCC ATCTCCAATC AAGAAGCTGG TATCTGTAAT        1380

GTGAGACAAG ACATGAGACA ACATACCTGT CGTTGAAGTT TTTCCATGTG CTCCTGCTAC        1440

TCCCATGCTA ACAAAGTCAC GCATAAAGCT ACCTAGAAAC TCATGGTAAC GTTTGTAGCT        1500

GATACCATTT TGGTCCGCAT AGGCAATTTC GACGTTGTTA TCTGGACGAA AGGCATTTCC        1560

AGCGATAATT TCCATATCAC CGTCTAGATT TTTTTCATCA AAAGGAAGAA TGGTAATTCC        1620

TGCCTGCTCA AGACCGCGTT GGGTAAAGTA GTACTTTTCA ACATCTGATC CCTGAACCTT        1680

GTGCCCCATC TGGTGCAACA TCAAGGCCAA GGCACTCATC CCTGATCCCT TAATTCCGAT        1740

AAAATGATAT GTCTTTGACA TGTTTTCTCC CCTATTCTGT CATTCTGGTC AGATTCAACT        1800

CTTGGGCAAC CCGACGTTCT TGTTCTGTTT GTTTACTTTT TTTATTGTAG ATTTGGCTCT        1860

TCTTTAGAAA ATCATAATTG TTTTTCTTTG GAGCAGGTGC TGACACTTCT TCATTCTTGG        1920

TAGGGATAGA ATGAACTTCT TCCGCCAAGA TATAATGAGA CTGGGTCAAT TTTTGGCTAT        1980

ATTTGACAAA TTCACCAGGA TTTTCCTTTT GGAAAGGAGC TGTCGGTTGA TTGCCCTGTC        2040

TAACTAGACT GGGCTGAGAA TGACGTCTCG CAAGGCTGAA ATCCTGAGTT AGGTAGTTAG        2100

CAGAGCGTTT CTTTTTCAAG TCCGCACGCG CTTCTTCACG CGCCACCTCC GCATAGCTCT        2160

TTCCTTCTTT TTTAACCCCT AAAGGAGCCT TTTTAGGTTT TTCGACTTGC TTTTCAATCG        2220

GTTTTACTGG TTTTTCTTCA GCAATAGGAG CCCATTCTAA ATAATTTTTA TCTCGATACT        2280

CACCCTTGAT ATTACTGATC AGATCAGACT CATCATAGAG ATTCATGACT GGCATTTCAG        2340

TCAACATGAC CTCGTCATCT GACACCAATG GAAATCGTTC TTGTTTCATT TTCTATTTCC        2400

TTTCAACACT TCATTATAGC GTATTGTCTT GATTTTTCAA GTGCTGGCTT CAGAAATTCC        2460

CAAAATTTCT CTAATTTCTG CTAGGGTCAG ACTACCACGT GACTCTGTGC CGTCCAATAC        2520

TTGTGACACC AGATGTTTCT TTTGTTCTTG GAGTTCCTGA ATTTTTTCTT CAATGGTTCC        2580

CTTGGTCACC AAGCGATAGA CCTCAACCGT TTCTTCCTGA CCCATCCGAT GGGCACGGCC        2640

AATGGCTTGC GCTTCCACCG CAGGATTCCA CCAAAGGTCA ACCAAGATCA CTGTATCTGC        2700

ACCTGTCAGG TTCAGACCGA CCCCACCAGC CTTGAGGGAA ATCAGAAAGG CATCTCTTTC        2760

TCCTTGGTTA AAGGCCTTGG TCATGTCTTG TCTTTCCTTG GCTGGGGTTG AACCCGTAAT        2820

TTTAAAGGAA GTCAGGCCCA AGTCTGGCAG TTCTTGTTCA ATTTTTTCCA ACATTCCCTT        2880

GAACTGAGAG AAAATCAAGA CACGGTGTCC GCCGTCTGCC ACCTGTACCA GTAGGTCTCG        2940

GAGACTATCT AGTTTGCCGC TGGCTCCCTG ATAATCTTCC ATAAACAGGG CAGGAGTGTC        3000
```

526

```
ACATATTTGA CGCAAGCGCA TCAAACCAGA TAAAATTTCC ACACGACTTC GCTGAAATTC        3060

CTGTTCTGAC ACTTGAGCCA GATGGTCTCG CATCTGTTGT AACTGGGCAA GGTAAATAGC        3120

CTTTTGCTGG TCTTCCAGTT CATTTTTATA AACCACCTCA ATCAAGTCTG GCAATTCAGT        3180

CAGAACTTCT TCTTTCTTGC GTCGCATCAC GAAAGGCTTG ATAAACTGAG CCACTCGCTC        3240

TGCTGGCAAT TTCATAAATT CTTTCTTGCT TGGCAAAAGT CCAGGCATGA CGATTTGGAA        3300

AATAGACCAC AACTCACCCA GATGGTTTTC AATCGGAGTT CCTGACAAGG CAAAGACCGA        3360

CGGCACCACA AATTGTCTCA AGGTCTGGGC AATCTTGGTC TGGGCATTTT TCATGACCTG        3420

AGCCTCATCT AAGAAAAGGA AGTCAAAGGC CATCCCTTGA TAAAACTCAC TGTCCTGACG        3480

GAAGGTGGCA TAGCTAGTCA CATAGATTTG ATGGCTCTCG GCAAGAATCT CCTCACGACT        3540

TGCTTTCAAA CCATGAACAA CAGTCACATC CAACTGTGGA GCAAATTTCT GAAACTCATC        3600

TGCCCAGTTG TAAATCAAAC CCGACGGAGC GAGAATCAAA ACCCGACTTT CTTTTGTCAC        3660

TTGACTAGTC AAAAAAGCAA TGGTCTGAAG GGTTTTCCCA AGTCCCATAT CATCAGCCAA        3720

AATCCCACCA AAACCATAAT GATGGAGCAT CTGCAACCAG CCAATTCCCT TTTCCTGATA        3780

ATCTCGCAAG TCAGCCTTGA CCTGAGTTGC TTGCAAAGGA AAGTCCTCTG GATGCGTCAA        3840

ATCCTGGGCC AGATTCTGGA ATTCTTGTGA AAAAGAAACA CGGTCTCGCC CTTCAAAGAG        3900

ATGAGCTAAA CTGTAGGCCA AGGATTTCCG AGCCTGCAAG GTCCCATCTT TTAATTCAAA        3960

TTGCCCCAGT TCCTGTAGAT TTTGGCGAAT TTTCTTGGTT TCTTCATCGA AAAAGTAAAC        4020

TTGATTAGAC GAATCAATAT AAAAATCCTG ATTGGCAACC AAGGCCTGCA TGGCTTGGTC        4080

GATTTCCTCC TGGACAATAT TTTGAAAATC AAACTGGATT TCCAAGAGAC CTCCCTTGGA        4140

GGCAATCTGC ACCTGAGGAC TCGCTAGGCT ATAAAGCTCT TCTAGTTTAT CTGATAGGTC        4200

AACATGCCCG AGTTTTTCAA AGACTGGAAT GATATCATGA AAAAAATGAT AGACAGACTC        4260

CGCTTTTAAG GCCTGACGCC AAGATTGAAA ATCGGCCTCA AAGCCCGCAG CCAAACAGAC        4320

TTGGAAAATT CTTTCTTCTA AGTCTGCGTC ACTTGAAAAG GGTAATTCTT CTAGCTCTTG        4380

TCGGCTAGAT ACCTGTCTAT TTCCATAATC AAACTGAATT TCTAAACGAA TCCGATTATC        4440

TTCTTCCCTG TCAAAGTAAA AAGAGGGCGC AAAAGTTTTG ATTTGTAGAC GTTCTGGAGC        4500

TGAAACGGTG CCCATCTGGA TAAAAAGAGT CAGACAGGAG GCCAATTTGT CTCGATCACT        4560

GCTATCAAAT TGCAGGTATT TCTTTCCTTG TTGACCCACA GGTAACGCTT TAATTTCCTT        4620

GAGAAGACGC ATCTGCTGGT CTGTTAAAAA ATAAACCTGA CCTTTATGGA AAAGTACTGC        4680

TCCCTGATAA AAGACATTGA CCCTAGGACT CTCACTGATT TCCATTTCAA AATAATCCGA        4740

GTATTCTGTT ACTGTAAAGG CAAATAGATT GGCATCAGCA TGCATATCCT GAAAAAGCAG        4800
```

527

```
GGTTTGGTAG CTATCCACTT GATGGTCAAA TTGAAAATGG GGCAAGGCCA TCAGTAAATT    4860

CACACCCTGC TCAAAAAAGG TCAGAGGGAA AAAGAGGTGC CGACCTTGGT TTTGGAAAAA    4920

GAGGTCTGGA ACCAGCCCTT CCTCCGTTAG TCCGTGCAAG AAAGTCAAAA GTTCTTGGCT    4980

GGCATCATCA AAGGCTTCCC AAGAAAGAGA CTCCTCATAA ATCTTGCCAA TCATATACGA    5040

CTTTCTCTGC TCGACAATCC TTAAAAAAAG TGGAATATCC CGAATGACAT AGTATTTTTG    5100

GCTATTGATT TGGCCGATTC TCAGAGTCCA CAAGATATGA TTGGTTCCTG CTTCCACCTG    5160

ACCCACAGCT GATAACTCAT AGGCGCATTC TGATTTTGGA GATAAAATTC GATCCAAAAA    5220

CTTGCCACCC AAGGTCACCT TGGTTTCAAC AGCCTCTTTT TCTTCATGAC CTTCTTCCAG    5280

ACTCCACAAG ATTTCCTGAC CACGCTCATC ATTTTTCAGA AAATGCTCTA GCGCTGCCAA    5340

ATGCACACAG TAGCCCCTCT TTTGAAAAAA ATCACAGGCA CAAAAAACCA AATCATCCTC    5400

TAAACTATAG CGCAGTTCTT CTTCTGCAAC GCGAGCGTAG AGCCGATTGT TCTTTTCCTT    5460

GATGATATCA ACCTTACCAG TTTCATAAAG GGCAACACCT TCGATACGAA TTTTCCCCGG    5520

AATCAATTTA GCCATATTTT CACCTTTACC TTATCTTTTT ATTATACCAT ATTTTCGCCT    5580

ATGAAAATAG CCTTCTAGGA AGACTTTTCT CCTAGAAGGC TGGATTTTTA ACGTTTGGCA    5640

AAAGTAGCCA CAATCCGCTG ACAGACTTCT TGCAACAGAG ATTTGGGCAT AGCTATATTG    5700

ATGCGGGCAT GGAGACTTCC TTCCTCTCCA AAATCCAAAC CACGGTTGAG GATAACCTTG    5760

GCTTCATTTC TCAACAACTC TTGCAATGTT TCATCAGTCA GGTCATAAGC TGAAAAGTCA    5820

AGCCAAATCA AGTAGGTACC TTGCGGTTTC ATGACCTTGA TTTTAGTCTC TTTTCCAAAT    5880

AGATCCATCA CATAATTGAT GTGGTCTTCA AAGACTTGCT TGAGTTCCTC TAGCCAATCT    5940

TTACCGTATC GATAGGCAGC TTCTGTCGCC AAATAACCCA AGCCTGAAAT TTCATGCTGA    6000

TTATTGGCCA ACAGGCGTTT CTGGAAAGCC AGTCTCAACT TAGGATTTTC AATGACTGCA    6060

TAGGAATTTT TTGTTCCAGC AATATTAAAT GTTTTAGTGG CACTGCTCAA GACGATAGCA    6120

AAATTTTTGA AGGCAGGATT GATGGTATTG AAAGACTGGT GTTTGTGACC AAAGAGGGTC    6180

AAATCTTGGT GAATCTCATC CGAAACTAAC AAAACACCGT GTTTTTGGCA GAGTTGGCCA    6240

ATCTTCTCCA ACACTTCTTT TTCCCAAACA CGTCCACCAG GATTGTGAGG GTTGCAAAGA    6300

ACATAGAGTT TAACCTCCTC TTCCACCAAA TCCTTTTCAA GTTGGTCAAA GTCAATCTCA    6360

AACAGACTAT CCTTTTCCAC TAAGGAATTA GTAATCAATC TACGATTATT CAACTTGACA    6420

CTGCGAGCAA AGGGTGGGTA GACAGGCGTG TTAATTAAAA CCGCCTCGCC TTCTTTTGTA    6480

AAGGTTTGAA TAGCTGTTGA GATGGCTGGT ACCACACCCT CGATAAAGAC AAGAGCCTCT    6540
```

528

```
TTGTCAAAGT TGTAACCGTA TTGTGTAGCT TCCCACTTTT GAACTTCCTT AATTAAGTCT    6600

TCACTGGCAT AGGTATAACC ATAAACCAGT TGGTCTGCGT AAGTTTGCAC GGCTTGGCGG    6660

ATTTCAGGCA AGACCACAAA GTCCATATCC GCTATCCAAG CTGGTAGAAC TTCACTATCC    6720

GTTTCTGTTT CTTTCCATTT ATAGGTATGG TGCCCTAAAC GGTTGGGCAG GCTTGTAAAA    6780

TCATATTTTC CCATCTTTGT CTTATCCTTC TATGGCTTGG CGCAAATCTG CAATCAAATC    6840

TCTAGCATCC TCAATCCCAA TAGACAAACG CAAGAGGTCA TCTGTCAAAC CATAAGAATG    6900

GCGTACCTCT GCTGGAATAT CAGCATGAGT TTGAGTCGTT GGATAAGTAA TAAGACTTTC    6960

CACTCCACCC AAACTTTCCG CAAAAGAGAA GACCTTGAGA CTGTTCAAAA TATGAGGAAT    7020

GCGTGTTTCA TCGGCTACTT TAAAGGAAAT CATGCCTCCA CGACCAGTGT AGAGAACTTC    7080

CTTAACTGCT GGAGAATCCT TCAAAAAGGC AACCACTTCT TGGGCGTTAG CTGTTGAGCG    7140

CTCCATACGA AGAGACAAGG TCTTGAGACC ACGAAGCAAC TGGTAGCTGT CAAATGGAGA    7200

CAAGACTGCC CCTGTTGTAT TAAGATTGTA AAAAGCTTC TCGTATAGTT CTAAACTATT    7260

GGTCACAACC ACTCCAGCCA AGACATCATT GTGGCCTGCT AGATACTTGG TTGCTGAATG    7320

GAGAACGATA TCTGCTCCAT CTTCAATCGG ACGTTGGTAG ATAGGGCTAT AGAAGGTATT    7380

GTCCACCACC ACTTTGCAC CCTTAGCATG AGCCAATTTT GCTAGTTTTT CGATATCAAA    7440

TTCCAACATC AAGGGATTGG TTGGGGTTTC GATATAGAGA ACATCCACAT CCTTTTCTAA    7500

CTCGGCAATC AACTCTTCTT CTGTATTGGC ATAGGTAAAA TGGAAATGAC CTTCCTGCTC    7560

CACTTGGTTA AACCAGCGAA AAGAACCACC GTAAAGATCA CGCACTGCCA AGACCTTACT    7620

TCCTACTGGA AAGACGCTAA AGGCCAGTAC AATAGCTGAC ATCCCTGAGC TAGTCGCTAG    7680

GGCATAGTCT GCTGACTCAA TAGCCGCCAA GACTTCCTCA GCCTTACTAC GAGTTGGATT    7740

TTTAGTGCGC GTATAGTCAA ACCCAGTAGA TCGACCAAAC TCTGGATGCT GATAGGTCGT    7800

TGAAAAATGA AGTGGTGTCA CCAAAGCACC TGTTGCCTCA TCAGACTTGA TCCCTGCTTG    7860

TGCTAAAATT GTGTTAATGT GTAATTCCTT GCTCATACAA TTCCTCCAAA TCTATAGTAA    7920

CTATTGTACC ACTTATTTTG TATCCTTCGT TTTCTTGTTT TCAAGAGCTA GTTATAGTTT    7980

CAAACTATAT AAAAAGGGAG TTTTTCCTGC TCCCTTTAAT AGACTATAAA ATGGTGAATC    8040

TCAAAAGACA CCTTCACTCT ATCATTTGCT CCTGCACAAA ACGAGCATAA CGCTCATGAT    8100

TTTCCAGTAG TTCCTTATGA GTTCCTGAGC CAGTGATTTT CCCCTCCTCT AAGAAGAAAA    8160

TACAATCCAC ATCTTTTACC GTTGACAAAC GATGCGCTAT AATCACAACC GTCTTCTCCT    8220

TTAGTACAGA ATAGAGGCTA CTGATAATCG CATACTCAGA ATCCGCATCA AGATTAGCAG    8280

TGGCTTCATC AAATATAAGA ATTTCAGCAT CTTTTAAGTA GGCTCTAGCT ATTTGAAGTC    8340
```

```
TTTCGTTCGC CCCCCTGACA AGAGTCGTCC GCGTTCACCA ACTTCAGTAT CTAGTCCCTC      8400

TTTCATGGAG CGAATCTCAT CACCTAGTGA TACTAAGTCT AGCACTTTCA TCAATTCATC      8460

ATCAGTTACT AAGCGATTCA AACCGAGACA AAGATTGTCA CGAATACTGC CAGATAAGAC      8520

TGCATTATTT TGTGAAACCC AAGCGATTTT ACTTCTCCAT TCTTTTAAGT TAAAATCATA      8580

TATACTTGAT TGCTCCATTA GAATATCTCC TGAAAGCGGT TTATAAAACC GCTCTAACAA      8640

ACGCACAATC GTTGATTTTC CTGATCCAGA TGGTCCAACA AAAGCAATTT TTTGCCCCTT      8700

GAAAATTGAA CAAGTAATAT CCTTTAAGAC AGGTCGATTT TCATCATAAC CAAAATAGAC      8760

ATGGTTAAAA TTCAACCCTC GTCCTGATAC CGATTTTCCT CCCTCAAATT TTTCTTTAGG      8820

AACTGCAAGC AAGTTCTCCA GTGCAACTGA AGATCCCTTG CTCCTAGAAT AAACAGTTAC      8880

AAAATTAGCT ATATTACTAA TAGGATTAAG TAATTGAAAG AGGTAAATCA AAAACGAAAC      8940

CAAGGTTCCC ACAGATATAT ATCCTGCGCT GACCCGATAA CCCCCATAGG TTAGCATCAC      9000

AGCTATAGTC GCAAAGATAA ATAAGAGAGC AAACGGGGTC TCAAAGAAG TAACCCTATC      9060

TGATTTCAGT GAATTGTTTT GTACCCTTTC AATACAATTA TCCAAAACAT CCTGTACACT      9120

TTTCTCTGCT TGGTTAGTCT TAATTAATTC ATGTTCTTGA ATCTTTTCAG TCAATTGCCC      9180

TGTTAAATTT CCTCCTGTAA ACGACGACTA TACTTTTCAC TGATATTGGA AAGGGGCAAG      9240

ATAATAAACA TCATACAAGG AAGAGTGATG AATAAAAGTA GAGAAAGATT CCAATCAAGA      9300

CTAAATAAGA CTACAATCCA ACCAAGTACC ATAACTAAAC TCAGAATAAT ATTTGGGAAA      9360

GTCGTAATTA AAAACTCACG AATGACACTC GTGTCATTGA CAATGGCAGA AGTCAACTCC      9420

CCACTTTGGC TCTTATCAAA GAAGGATTTC TCTACATAAA TCAACCCCTC TATCACTTTT      9480

TTCCTGATTT TTGCTATCTT TTTTTCACCC GATTGACTAA ACAGATAGTA ACCAATAGAA      9540

GAAAACAAGG CTTGACCAAT AAAAATCAAA AACGATTGAA ATACTTTGGA GCCTATATTT      9600

TCAATAGAAC TCCCATCTAT TAAATCCTTT AAGATAAGGG GAAGCAACAA AGCAAGTAGA      9660

CTAGACAGAA CAAGTAAGAA ACTCCCCATA ATCACCTTAG TATCTACTCT TAATAATTTT      9720

AATTTCATAA ATACTCCTTA TAATATTTCA ACGGATAAAG TCGGGAATAA CTCAATTTGA      9780

GGATAAAATC TAATAAATCT TCCTATAACA AAACGCATAA CATCTAGGAT TTTATATACC      9840

TGATATTATG CGTTTTTAAG CACAAAGACT TCTTACACAA ACTTATCTAC AATTAGATTT      9900

TATTTGACAT GTTTTGCCAA TTCTTCTTGG GCTTTTTTAT TGGATTCTTC TTTTTCTTTC      9960

AACCATTTTT CTCTGGCTTT TGCATATTCG TCTGTTGTGA CAATCTTATC TTGTACTTTG     10020

AGGTATTTAT ATGATTCAAC CCCTTTTGTA CCGGTTAAAC CATAGGCAGC AGCAAATGGT     10080
```

530
```
ACGGTTCTTC TCAATGATGG TGTTCCCCCA CGCGAAACAC TTGGAAGAAC TAAAGAACTA      10140

TCAATCAACC AAGCTTGAAT ATCAGCATAT TTCTCATAAC GTTTGGCCGG ATCTTGCTCT      10200

TTATTAGCTT CTTCCAACAT TTGAGTATAG ACATCCAGTC CAACTGCCTT AGCCTTGTCA      10260

TTGGCCTCAC CAGGCTCTAG TCCAAGATTT TGCAGAAATC CTCCACTATT AGTATTAAAA      10320

ATATCGAGAT AGGTTGACGG GTCTTGATAA TCAGGTCCCC AACCGCCATG ATATAAATCA      10380

TAATCTTTCT GAGCAGCTGT TTGAGCAAAG TAGCCTGAAC TGTCAAACTC ATCTGATGTT      10440

AATTGCTGAA TGTCAATCAC TACATTATCA GAACCTAAAA CAGATTCAAT TGATTGTTTG      10500

ATAGAACTAA CTCCTTGTAT GCCTACTTTA TCTGTTACTT CCACAGTCTT ATCCAAGTGG      10560

ATTGGGAATT GAACACCCTT TGCTTCGAGT TCTTTCTTAG CTTCCGCAAA CTTAGCCTTG      10620

GCTTTCTCAG GATTGTAGTA AGGGTCTTGA CCATCCGCAA AGTTGATACC TTGCCATTCC      10680

TTACCATAGT TGACCATCTT AGAGGCTACA ACTTCACCAA AGTCTTTTCC CTTGATACTG      10740

ACAAAGTTTG GAGGAACCAC TAGGTTACGC AAAATCTTTG TTGCACCTTC TTTCCCTTCA      10800

GACTGAGCCC CATAAGATGT TCTGTCAAAA GCAAAATTGA TAGCCTGACG GAAGTTTTTA      10860

TTGAGAACTG CTTCCTGAGT CGATTTCTTT TCAATGTCAC TTGTTTTAGA AGTATAATTG      10920

TAAGACTTCC TATCTAGGTT AAAATTAAAG AAATATGAAG TTGAATTTTG CATACTATAG      10980

ATGATATTGT TTTTGTATTT TTCTTTAATC CCTTCATAGC TGGAGCTGTT AGGAAAAAGA      11040

CGAGCCGTAG TATAAGCACC AGCTGTAAAA TTACGTTCCA GTGATTCTTG GTCGCTACCA      11100

TCATAGTAGG TCAATTTCAC ATCGTCTACA AAGACATTCT TAGCATCCCA GTAATTAGGG      11160

TTTTTCTTAT ATTCAATAGC AGATTTTGAG ACAAGTGCTT TCATCAAGAA AGGTCCATTG      11220

TACAAAATAC TAGATGGATC CGCCTTCCCA AAATCATCCC CTTTTGATTT CAGGAAATCT      11280

GCATTAACAG GAAAAAGTAT CGTTGCAAGT GTTTTTGAAT TCCAGTAAAG TTCTGGTTTA      11340

ACCAAAGTAT ATTGAACCGT TTGGTCATCA AGTGCCTTGA CACCGACAGT TGAAAAGTCG      11400

CTTGTTTTAC CAGTGATATA GTCATCCAAA CCAGCAACAG AGTCCTGCAC TAGATACAAG      11460

GCTTCTGATT TTTTATCAGC TGCATATTGC AAACCTGTCA CAAAATCCTG GGCAGTTACA      11520

GGCGCATATT CTTCTCCCTC AGAAGTAAAC CACTTGGCAT CCTTACGAAG TTTGTAGGTA      11580

TAGGTCAAAC CGTCCTGAGA AACAGTCCAA TCCTCTGCTA ATGATGGAAT AATATTCCCA      11640

TATTGGTCAT TTTCTAATAA CCCGTCTACC AAATTTGCAA CAATATCGGA TGTTGCTGCG      11700

CGGTTTTCTG CTAGATAGTT CAAGCTAGAT GGATCACTTG AATAAACATA GTTGTAGGTT      11760

TTTGACGCCG TGCTAGAATT TCCACACGCG CTCAATAAAA CTCCTGTACC CAGGACAAGA      11820

CCTGCCAAGG TTAGATATTT GCTCTTAGAC TTTTTCATTT CCGG                        11864
```

531

(2) INFORMATION FOR SEQ ID NO: 62:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 2412 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

```
TAACTGCACT AAACATAATA TAAGGAGAGA AAATGTCTGC AATAGAACGT ATTACAAAAG        60

CTGCTCACTT AATTGATATG AACGATATTA TCCGTGAAGG GAATCCTACT CTACGCGCGA       120

TTGCTGAGGA AGTCACTTTC CCCCTATCTG ACCAGGAAAT CATCCTAGGC GAAAAGATGA       180

TGCAATTCCT TAAACATTCC CAAGATCCTG TCATGGCTGA AAAAATGGGA CTCCGCGGTG       240

GTGTTGGACT GGCTGCTCCC CAGTTAGATA TCTCAAAACG CATTATCGCT GTTTTGGTAC       300

CTAATATTGT TGAAGAAGGC GAAACTCCAC AGGAAGCCTA CGATTTGGAA GCCATTATGT       360

ACAATCCAAA AATCGTCTCT CACTCTGTTC AAGATGCTGC TCTTGGCGAA GGAGAAGGTT       420

GCCTGTCTGT TGACCGTAAC GTGCCTGGCT ATGTTGTTCG CCATGCCCGC GTTACTGTTG       480

ACTACTTTGA CAAAGATGGA GAAAAACACC GTATCAAACT CAAAGGCTAC AACTCCATTG       540

TTGTTCAGCA TGAAATTGAC CACATTAACG GTATCATGTT TTACGATCGC ATCAATGAAA       600

AAGACCCATT TGCAGTTAAA GATGGTTTAC TGATTCTTGA ATAAAGAAAA TCCCGTTGCA       660

AGACGGGGTT TTGTGTTATA ATAGAGGCAT GAAAACAAAT GATATTGTCT ATGGTGTCCA       720

CGCCGTTACC GAAGCCCTCC TTGCAAATAC AGGAAACAAA CTCTACCTCC AAGAAGATCT       780

CCGAGGTAAG AATGTTGAGA AAGTCAAGGA ACTAGCTACA GAAAAGAAGG TGTCCATTTC       840

TTGGACATCA AAAAAATCTC TCTCTGAGAT TACTGAAGGT GCTGTTCATC AAGGTTTTGT       900

TCTACGAGTG TCTGAATTTG CCTATAGCGA GCTAGATTAC ATCCTTGCAA AAACACGCCA       960

AGAAGAAAAT CCACTTCTAT TGATTCTAGA TGGTCTAACC GATCCCCATA ATCTGGGTTC      1020

TATCTTGCGA ACAGCCGATG CGACCAATGT TTCAGGTGTC ATCATTCCCA AGCACCGTAC      1080

TGTCGGAGTA ACTCCTGTCG TTGCCAAAAC AGCCACAGGT GCTATTGAAC ACGTtCCAAT      1140

TGCCCGAGTG ACCAACCTCA GTCAAACCTT AGGATAAACT TAAGGATGAA GGTTTCTGGA      1200

CCTTTGGAAC GGATATGAAC GGTACTCCTT GCCACAAGTG GAATACAAAA GGGAAAATCG      1260

CCCTCATCAT TGGAAATGAA GGAAAAGGTA TCTCTAGCAA CATCAAAAAA CAGGTCGATG      1320

AAATGATTAC CATTCCGATG AATGGACATG TTCAAAGCCT TAATGCCAGT GTTGCTGCGG      1380
```

532

```
CCATTCTCAT GTACGAAGTT TTCCGAAATA GACTATAAAA AAGTTTCCAG TCATCTGATT      1440

GGAAACTTTT TTATGATTAA CTATGTTCTG TAATGAATTT ATAGGCTTCT TGACCAGCGA      1500

TAGCTCCATC TCCAACCGCT GTTGTTACTT GGCGAAGGTC TTTCAAGCGA ACATCTCCAA      1560

CTGCAAAGAT ACCGTCGACT GCAGTTTTCA TGTGGTTATC TGTCACAATC CATCCTGCCT      1620

GATCTTGGAT ATTCAATTCT TTAACAAAAT CGCTAAGAGG GTCCAAACCA ACATAGATAA      1680

AGACACCACC GAAGGCTTGT TCTGTCACTT GACCTGTTTT CACATTTTCA AATACGACTG      1740

ATTCTACTCG GTTTTCACCC TTGATTTCCC TTACTACAGA ATCCCAGATA AAGCTGATTT      1800

TTTCATTCGC AAAGGCGCGA TCTTGTAAAA CCTTTTGGGC ACGAAGTTGG TCACGACGGT      1860

GAACAATGGT AACAGTCTTA GCAAAACGAG TCAAGAAGAG GGCTTCTTCA ACAGCTGAAT      1920

CTCCACCACC AACTACCAAT AAATCTTGGT CACGGAAGAA AGCACCATCA CACACAGCAC      1980

AGTAAGAAAC ACCACGACTG TTCAGTTCTT CTTCTCCAGG CACTCCCAAA GGACGGTGTT      2040

TAGAACCAGT TGCTACGATA ACTGTACGTG TTTCATATGT TTGGTCATCA GTCATCACTT      2100

TCTTAAAATC ACCATGGCTT CGACATTTTC AACATAACCA TAAATGTGCT CAACACCAAG      2160

ATTTTCAAGT GGTTCAAACA TCTTTTCAGC CAATTCAGGT CCACTAATAT TAGCGTATCC      2220

TGGGTAATTT TCGATATCAG ATGTATTATT CATCTGACCA CCTGGCAGAC CACCTTCAAT      2280

CAAAGCTACT TTTAGATTGC TTCGAGCAGC ATACAAGGCC GCAGTCATCC cTGCAGGTCC      2340

AGCACCGATA ATAATAGTAT CGTACATATA GATTCCTTCT TTCTTGGTGT AACTATCTTT      2400

ATTCTAACTC TG                                                         2412
```

(2) INFORMATION FOR SEQ ID NO: 63:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 7760 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

```
CCGATTTGGT GGAATTTTTG TCTCATCATT TAGAAGGTGT TGCAAGAGCA GAGTTTACCT      60

TGGTGCTTCA TACCAAATTG GGAGAAGCCT CTGTTTTGGC AAATATTGTA GATGTAAACA      120

AGGATGAATG GATTTTAGGA ACAGTTGCTG GTGCCAATAC CTTATTGGTT ATTTGTCGAG      180

ATCAGCACGT TGCCAAACTC ATGGAAGATC GTTTGCTAGA TTTGATGAAA GATAAGTAAG      240

GTCTTGGGAG TTGCTCTCAA GACTTATTTT TGAAAAGGAG AGACAGAAAA TGGCGATAGA      300

AAAGTTATCA CCCGGCATGC AACAGTATGT GGATATTAAA AAGCAATATC CAGATGCTTT      360
```

533

```
TTTGCTCTTT CGGATGGGTG ATTTTTATGA ATTATTTTAT GAGGATGCGG TCAATGCTGC      420

GCAGATTCTG GAAATTTCCT TAACGAGTCG CAACAAGAAT GCCGACAATC CGATCCCTAT      480

GGCGGGTGTT CCCTATCATT CTGCCCAACA GTATATCGAT GTCTTGATTG AGCAGGGTTA      540

TAAGGTGGCT ATCGCAGAGC AGATGGAAGA TCCTAAACAA GCAGTTGGGG TTGTTAAACG      600

AGAGGTTGTT CAGGTCATTA CGCCAGGGAC AGTGGTCGAT AGCAGTAAGC CGGACAGTCA      660

GAATAATTTT TTGGTTTCCA TAGACCGCGA AGGCAATCAA TTTGGCCTAG CTTATATGGA      720

TTTGGTGACG GGTGACTTTT ATGTGACAGG TCTTTTGGAT TTCACGCTGG TTTGTGGGGA      780

AATCCGTAAC CTCAAGGCTC GAGAAGTGGT GTTGGGTTAT GACTTGTCTG AGGAAGAAGA      840

ACAAATCCTC AGCCGCCAGA TGAATCTGGT ACTCTCTTAT GAAAAAGAAA GCTTTGAAGA      900

CCTTCATTTA TTGGATTTGC GATTGGCAAC GGTGGAGCAA ACGGCATCTA GTAAGCTGCT      960

CCAGTATGTT CATCGGACTC AGATGAGGGA ATTGAACCAC CTCAAACCTG TTATCCGCTA     1020

CGAAATTAAG GATTTCTTGC AGATGGATTA TGCGACCAAG GCTAGTCTGG ATTTGGTTGA     1080

GAATGCTCGC TCAGGTAAGA AACAAGGCAG TCTTTTCTGG CTTTTGGATG AAACCAAAAC     1140

GGCTATGGGG ATGCGTCTCT TGCGTTCTTG GATTCATCGC CCCTTGATTG ATAAGGAACG     1200

AATCGTCCAA CGTCAAGAAG TAGTGCAGGT CTTTCTCGAC CATTTCTTTG AGCGTAGTGA     1260

CTTGACAGAC AGTCTCAAGG GTGTTTATGA CATTGAGCGC TTGGCTAGTC GTGTTTCTTT     1320

TGGCAAAACC AATCCAAAGG ATCTCTTGCA GTTGGCGACT ACCTTGTCTA GTGTGCCACG     1380

GATTCGTGCG ATTTTAGAAG GGATGGAGCA ACCTACTCTA GCCTATCTCA TCGCACAACT     1440

GGATGCAATC CCTGAGTTGG AGAGTTTGAT TAGCGCAGCG ATTGCTCCTG AAGCTCCTCA     1500

TGTGATTACA GATGGGGGAA TTATCCGGAC TGGATTTGAT GAGACTTTAG ACAAGTATCG     1560

TTGCGTTCTC AGAGAAGGGA CTAGCTGGAT TGCTGAGATT GAGGCTAAGG AGCGAGAAAA     1620

CTCTGGTATC AGCACGCTCA AGATTGACTA CAATAAAAAG GATGGCTACT ATTTTCATGT     1680

GACCAATTCG CAACTAGGAA ATGTGCCAGC TCACTTTTTC CGCAAGGCGA CGCTGAAAAA     1740

CTCAGAACGC TTTGGAACCG AAGAATTAGC CCGTATCGAG GGAGATATGC TTGAGGCGCG     1800

TGAGAAGTCA GCCAACCTCG AATACGAAAT ATTTATGCGC ATTCGTGAAG AGGTCGGCAA     1860

GTACATCCAG CGTTTACAAG CTCTAGCCCA AGGAATTGCG ACGGTTGATG TCTTACAGAG     1920

TCTGGCGGTT GTGGCTGAAA CCCAGCATTT GATTCGACCT GAGTTTGGTG ACGATTCACA     1980

AATTGATATC CGGAAAGGGC GCCATGCTGT CGTTGAAAAG GTTATGGGGG CTCAGACCTA     2040

TATTCCAAAT ACGATTCAGA TGGCAGAAGA TACCAGTATT CAACTGGTTA CAGGGCCAAA     2100
```

534

```
CATGAGTGGG AAGTCTACCT ATATGCGTCA GTTAGCCATG ACGGCGGTTA TGGCCCAGCT      2160

GGGTTCCTAT GTTCCTGCTG AAAGCGCCCA TTTACCGATT TTTGATGCGA TTTTTACCCG      2220

TATCGGAGCA GCAGATGACT TGGTTTCGGG TCAGTCAACC TTTATGGTGG AGATGATGGA      2280

GGCCAATAAT GCCATTTCGC ATGCGACCAA GAACTCTCTC ATTCTCTTTG ATGAATTGGG      2340

ACGTGGAACT GCAACTTATG ACGGGATGGC TCTTGCTCAG TCCATCATCG AATATATCCA      2400

TGAGCACATC GGAGCTAAGA CCCTCTTTGC GACCCACTAC CATGAGTTGA CTAGTCTGGA      2460

GTCTAGTTTA CAACACTTGG TCAATGTCCA CGTGGCAACT TTGGAGCAGG ATGGGCAGGT      2520

CACCTTCCTT CACAAGATTG AACCGGGACC AGCTGATAAA TCtACGGTAT CCATGTTGCC      2580

AAGATTGCTG GCTTGCCAGC AGACCTTTTA GCAAGGGCGG ATAAGATTTT GACTCAGCTA      2640

GAGAATCAAG GAACAGAGAG TCCTCCTCCC ATGAGACAAA CTAGTGCTGT CACTGAACAG      2700

ATTTCACTCT TTGATAGGGC AGAAGAGCAT CCTATCCTAG CAGAATTAGC TAAACTGGAT      2760

GTGTATAATA TGACACCTAT GCAGGTTATG AATGTCTTAG TAGAGTTAAA ACAGAAACTA      2820

TAAAACCAAG ACTCACTAGT TAATCTAGCT GTATCAAGGA GACTTCTTTG ACAATTCTCC      2880

ACTTTTTTGC TAGAATAACA TCACACAAAC AGAATGAAAA GGAGCTGACG CATTGTCGCT      2940

CCCTTTTGTC TATTTTTTAA GGAGAAAGTA TGCTGATTCA GAAAATAAAA ACCTACAAGT      3000

GGCAGGCCCT GGCTTCGCTC CTGATGACAG GCTTGATGGT TGCTAGTTCA CTTCTGCAAC      3060

CGCGTTATCT GCAGGAAGTC TTAGGCGCCC TCCTTACTGG GAAATATGAA GCTATTTATA      3120

GTATCGGGGC TTGGTTGATT GGTGTGGCCG TAGTCGGTCT AGTTGCTGGT GGACTCAATG      3180

TTGTCCTCGC AGCCTATATT GCCCAAGGAG TTTCATCCGA CCTTCGGGAG GATGCCTTCC      3240

GTAAAATTCA AACCTTTTCT TATGCTGATA TTGAACAATT TAATGCGGGA AATCTAGTCG      3300

TTCGAATGAC AAATGATATC AACCAGATTC AGAACGTTGT CATGATGACC TTCCAAATTC      3360

TTTTCAGACT TCCCCTCTTG TTCATCGGTT CGTTTATCCT AGCGGTTCAA ACCTTACCTT      3420

CTCTGTGGTG GGTGATTGTT CTCATGGTAG TCTTGATTTT TGGTTTGACT GCTGTCATGA      3480

TGGGAATGAT GGGGCCTCGT TTTGCCAAGT TTCAAACCCT TCTTGAGCGC ATCAATGCCA      3540

TTGCCAAGGA AAATTTACGT GGCGTTCGTG TGGTCAAGTC CTTTGTCCAA GAAAAAGAGC      3600

AATTTGCTAA GTTTACAGAG GTCTCAGACG AGCTTCTTGG TCAAAACCTT TACATTGGTT      3660

ATGCCTTTTC AGTAGTGGAA CCCTTTATGA TGTTGGTTGG TTACGGGGCG GTCTTCCTCT      3720

CTATTTGGCT GGTCGCGGGA ATGGTTCAGT CGGATCCGTC TGTTGTTGGT TCCATCGCTT      3780

CTTTTGTTAA TTACCTAAGC CAGATTATCT TTACCATTGT TATGGTTGGA TTTTTGGGAA      3840

ATTCTGTCAG CCGTGCCATG ATTTCCATGC GTCGTATTCG AGAAATTCTT GACGCAGAGC      3900
```

535

```
CAGCTATGAC CTTCAAGGAT ATCCCAGATG AAGAGTTGGT TGGAAGTCTT AGCTTTGAAA    3960

ATGTGACCTT TACCTATCCA ATGGACAAGG AACCGATGCT GAAAGATGTG AGCTTTACTA    4020

TTGAACCTGG TCAAATGGTT GGTGTAGTTG GAGCGACTGG TGCAGGAAAG TCAACCTTGG    4080

CTCAATTGAT TCCACGTCTC TTTGATCCAC AGGACGGGGC CATTAAAATC GGTGGCAAGG    4140

ATATTCGAGA AGTGAGTGAA GGAACCCTGC GTAAAACAGT TTCCATCGTT CTCCAACGTG    4200

CCATTCTTTT TAGTGGAACG ATTGCAGATA ACTTGAGACA GGGGAAGGGG AATGCTACTC    4260

TATTTGAAAT GGAGCGCGCA GCCAATATTG CCCAGGCTAG TGAATTCATT CATCGTATGG    4320

AGAAAACCTT TGAAAGTCCA GTTGAAGAAC GGGGAACCAA TTTCTCTGGT GGACAAAAAC    4380

AAAGGATGTC GATTGCGCGT GGGATTGTCA GCAATCCACG TATTCTGATT TTTGATGATT    4440

CGACCTCAGC CTTGGATGCC AAATCAGAGC GCTTGGTGCA AGAAGCTTTG AATAAGGACT    4500

TGAAGGGGAC GACAACCATT ATTATTGCTC AAAAAATTAG CTCGGTTGTC CATGCAGACA    4560

AGATCTTGGT TCTAAATCAA GGACGATTGA TTGGTCAAGG TACGCATGCA GACTTGGTTG    4620

CCAACAATGC CGTTTACCGT GAAATCTATG AAACACAGAA ATGAAAGACA AACTATAAGA    4680

AAAGTCAATA GTTTTATCTA AACTATTTCT TATTTCAATT TGATGATTTG GCGATGATTT    4740

TAGAGCACGG CAAAAAGCCC TTGAAAAAGT CCATTTTTTC AAAGGTAATC CTGTGTTAAT    4800

TTCAGAAATT ACATCACTTT TTGTTCGTCA AATGGCAGCT CTTTTTTTAG GATATAAAAC    4860

AGGGTTCGGA TAACTTTTTT TGCAAGGTGG ATGATGGCTA CATTGTAATG TTTTCCTTGT    4920

TCTAATTTAG TCTTAAGATA GGCCTTAAAA GCAGGCGAAA AGCGAGGGCA TGCTTTGGCA    4980

GCTTGTATGA GTACCTACCG CAGATGAGGG GAACTCCGTT TGACCATTCT TCCTGCTAAA    5040

TCAATCTGAT CTGACTGATA AATAGAAGAA TCCAGTCCAG CGAAAGCTTG TAATTGAGCA    5100

GGATTATCAA AGGCATGAAT ATTTCGAATC TCAGCTAAAA TGACCGCCCC TAAACGATCC    5160

CCAATCCCAG TAACCGTCGT GATGACCGAG TTGAACTCAG CCATCAAGTC ATTGACACAT    5220

GTTTCCGCCT TGTCAATGAG CCTCTTGTAA TGTTTGATGT TTTCATTACA CGAGATAAAA    5280

CGTCTATGCG TTATCAAACT CATTACCAAT TAAAACAAAA AGCTGTGGTT AGATCCTTTC    5340

GGAAATTGTC AAGCGATTGG AGGAAATGAA CTAATCCACA GCGGCTTATT CCAAGTATAC    5400

CACTTGGGCT TTGGCAGTAG CTAACTGCGC TAAATATAAT ATAAGGAGGA GTAAAATGAA    5460

GACAGTTCAA TTTTTTTGGC ATTATTTTAA GGTCTACAAG TTCTCATTTG TAGTTGTCAT    5520

CCTGATGATT GTTCTGGCGA CTTTTGCCCA AGCCCTCTTT CCAGTCTTTT CTGGACAAGC    5580

GGTGACGCAG CTAGCCAATT TAGTTCAAGC TTATCAAAAT GGCAATCCAG AACTTGTATG   . 5640
```

536

```
GCAAAGCCTA TCAGGAATCA TGGTCAATCT TGGCCTGCTG GTTTTGGTTC TATTTATCTC        5700

TAGTGTAATA TACATGTGTC TCATGACGCG CGTGATTGCA GAATCGACCA ACGAGATGCG        5760

CAAAGGCCTC TTTGGTAAGC TTGCTCAGTT GACGGTTTCT TTCTTTGACC GTCGACAAGA        5820

TGGCGATATC CTGTCTCATT TTACCAGTGA TTTGGATAAT ATCCTCCAAG CCTTTAACGA        5880

AAGCTTGATT CAGGTCATGA GCAATATTGT TTTATACATT GGTCTGATTC TTGTCATGTT        5940

TTCGAGAAAT GTGACGCTGG CTCTCATCAC CATTGCCAGC ACCCCATTGG CTTTCCTTAT        6000

GCTGATTTTC ATCGTGAAAA TGGCACGCAA ATACACCAAC CTCCAGCAGA AAGAGGTAGG        6060

GAAGCTCAAC GCCTATATGG ATGAGAGCAT CTCAGGCCAA AAAGCCGTGA TTGTGCAAGG        6120

AATTCAAGAG GATATGATGG CAGGATTTCT TGAACAAAAT GAGCGCGTGC GCAAGGCAAC        6180

CTTTAAAGGA AGAATGTTCT CAGGAATTCT TTTCCCTGTC ATGAATGGGA TGAGCCTGAT        6240

TAATACAGCC ATCGTCATCT TTGCTGGTTC GGCTGTACTT TTGAATGATA AGTCTATTGA        6300

AACAAGTACA GCCCTAGGTT TGATTGTTAT GTTTGCACAA TTTTCACAGC AGTACTACCA        6360

GCCTATTATC CAAGTTGCAG CGAGTTGGGG AAGCCTTCAG TTGGCCTTTA CTGGAGCTGA        6420

ACGAATTCAG GAAATGTTTG ATGCAGAGGA GGAAATCCGA CCTGAAAAGG CTCCAACCTT        6480

CACTAAGTTG CAAGAAAGTG TTGAAATCAG TCATATCGTT TTTTCATACT TGCCTGATAA        6540

ACCTATTTTG AAAGATGTCA GCATTTCTGC CCCTAAAGGC CAGATGACAG CAGTTGTTGG        6600

GCCGACAGGT TCAGGAAAAA CGACTATTAT GAACCTCATC AATCGCTTTT ATGATGTTGA        6660

TGCTGGTGGT ATTTATTTTG ATGGTAAAGA CATTCGTGGC TATGACTTAG ATAGTCTTAG        6720

AAGCAAGGTG GGAATTGTAT TGCAAGATTC GGTCTTGTTT AGCGGAACGA TTAGAGACAA        6780

TATCCGATTT GGTGTGCCAG ATGCTAGTCA GGAAATGGTT GAGGTAGCAG CAAAAGCAAC        6840

CCACATTCAC GACTATATCG AAAGTTTGCC TGATAAGTAC GATACTCTTA TTGATGATGA        6900

CCAGAGCATC TTTTCAACAG GGCAGAAGCA ATTGATTTCA ATCGCTCGAA CCCTGATGAC        6960

AGATCCAGAA GTTCTCATTC TCGATGAAGC AACTTCAAAC GTAGATACGG TGACAGAAAG        7020

CAAGATTCAG CATGCCATGG AGGTGGTTGT AGCAGGTAGA ACTAGTTTCG TCATTGCCCA        7080

CCGCTTGAAA ACCATTCTCA ATGCAGATCA GATTATTGTC CTTAAAGATG GAGAAGTCAT        7140

TGAACGTGGT AACCACCATG AACTTTTGAA GCTAGGTGGC TTTTATTCAG AACTCTATCA        7200

CAATCAATTT GTTTTCGAAT AAGAAAGAAG TTGTCCTATG TGGGCAGCTT TTTCTTGTCC        7260

ATAAAAAATG TTTATCACAG CCTTAAAAAA AACATATTAG ACGAAAGTCA TTTTGAGTGA        7320

TATGATAGGA CTATCGTTAG CATTCGAAAG GAGAGGCATC ATGGCTAGAA CGGTTGTAGG        7380

AGTTGCTGCA AATCTATGTC CCGTAGACGC AGAAGGCAAA ATCATTCATT CATCTGTATC        7440
```

537

```
TTGTAGATTC GCAGAGATCA TTCGTCAAGT CGGTGGTCTC CCTTTAGTCA TTCCTGTTGG      7500

TGATGAGTCA GTTGTACGTG ATTATGTGGA AATGATTGAC AAACTCATTT TGACAGGAGG      7560

CCAAAATGTT CATCCTCAGT TTTATGGAGA GAAAAAGACC GTCGAGAGCG ATGATTACAA      7620

TCTGGTCCGT GACGAATTTG AATTGGCACT CTTGAAGGAA GCGCTTCGTC AGAATAAACC      7680

AATTATGGCA ATCTGTCGCG GTGTCCAACT TGTCAATGTT GCCTTTGGTG GAACCCTCAA      7740

TCAAGAAATC GAAGGTCAGG                                                  7760
```

(2) INFORMATION FOR SEQ ID NO: 64:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2723 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

```
GAGGTTTTAA TTCACTTACC TCTsCCGTAT CTTTATTTAA AATGAATTCT TTTACGGTTG        60

TATTTCTTGC AAAATCTTTT ACAACAATCT TAATGTTTAG TGTCTTGTCT ATTATTTGTT       120

TAATATCATT AAATGATGTA TATTCTTTTC CATTTATATA AATATGTTGT TCTTGAATCT       180

CACCATCGAA TCCATTATTT CTTTTATCAT TGATGTTAAA GACTACAGAT TTTCCATCAG       240

CATATTCGAT ACTAGTATTT CCCTTAGGAT CAATGTTTAC TTCGGGTTTA ACATTATCAT       300

ATAAAAACTG ATAGTGGACT CCAACTGCTT TAGCATTCAA ATCGCTATAG CCAGTTTGAA       360

GATAAACATT TCCATCCATA TCTGTTACCT TATCTGGAAA TCCGTTTGCT TTATAGTCTT       420

TCATTCCCCA GTCCATGATG TCACCGTCTT TAACATTCAG CTTAATATTA AAATCTCTAG       480

TGTTATCAAT GTGTAAATCT CCGTAGATTA AATAATTATC TACAACCGAT TCATTAACTC       540

TCAATTCCCA GTTAAAACCA CCCTTATCAG AAATCTTACC TCTTAAATAA AATTCTGGAT       600

TTCGTACATA AATTTTATTA GATTTAGATG GATTAAAGTA GTTCTTATCC ATTGAAAGGT       660

TTACTGGTTT GGTATCAATA AATAACATGG AGCCATCTTC TTTTATAGCT TCTACATTGA       720

ACTTATCCTC TCCAGTGTAT TCTTTATCAT CCTTACCAAA TAATACAAGT TTAGAAGAAT       780

CTGTCACAAG ATTTCCGTCT TTATCGATAG CTTCCCCTTT ATCGTTCATT TTAAATGTAA       840

ACACTTGATA CCTTATAATG TTAAAGCCGT CCAAAGCCGA CATTAATACA GATTGGGTAC       900

TTCTTCCATC TTCAACATTT CTACTATCAG CATAAATTGT TGTTTCTGAA AGGGCTCTTA       960

GATTAGGATT GGCCTTTTGT ATTTTTGCTA TATCTTCCTT GCTATAGACT CCATTTCCTT      1020
```

538

```
CTAACATATC CGTTTTTCCA GGATTATAGG TAGTCACTTT TAGTGCATAG CCTTTTCTTA       1080

GAATGATATT ATCCTTTAAC AGATATTGTT GTTTTTCTGA ATCAGAATAG ATTTTACCAG       1140

ATTCCATTTT AGTTAAATTG TCTGGTTTGT TTTTTGAAAG ATCTCCTTCC CCTAATTCTA       1200

TGACATTCCC ATAACTTGAT ACATAGGGAT ATTCTGATTT AGTTTCCTTA ATTTTTTCAG       1260

GCATTCTAAT TTTAATTTCA GCTTTTTTCT GATCATTATC TTTAACAAAT AATCTCATAT       1320

CTCCTGCAAA AGCTAATCCA TCCACAATAT CATTAATATT AGCGTATAGA TCAAATGTCA       1380

TCGTTTTTGA GTGGAAATCA TACTTGGTCG CTTTGATTTC TATAGATTTA TAGTTATTCC       1440

CATAATATAC CTTGGCATTT TTAGAAACAT TACTTATCTT TCCAAGAATT TCAAAGTGTC       1500

CATCTTTAGA CGGACTTAGA ACACCATAAA TTTTTGATTT GATTTCGTCA AGTTTCTCAG       1560

TTTCATATTC TAGATCAGTC CCATCATCGT AGGCTATTAT ATTTCCTTTA TCATCGTATT       1620

TATAATCGTA TTCCTCCATT CTCTTACCAG TTTCACTTGT AAAATCATCA ACTTCTCTAA       1680

ATTTCTTTTT AATGAGTTTC TTTAAGTCTT TATTTTCAAA GTCTCTAATT GTTGAAATAT       1740

TTCTATCAAT AGTAAAACTA GATTTTTCTT TAATAGACTC TTCATTTTCT TGATGATGAT       1800

GTTCTACCCC AGTTGTATCT TTTTTTAGAC TACCCTCTTT TCCATTTCCT AAATTTTTAA       1860

ATTTAGATTC TGCAATCTCG CCAAGCTTTT GATATTTAGA TGAATCTTGA TCAGGATCTA       1920

CTAGATAATA GGAAATCATC CCCTTTTCAT CAGCCTGATT AGCAAATTTA ATTCTATGAA       1980

TCTTTGTGAA ATTGCTAGAA CCATCTAATG CAATGACTTC AATGATTTTT CCCCTTAAAT       2040

CTCCCGCACC TTTAATTTCA TAAATGGTAT TTCCGTCTTT ATCAAGTTTT CTATTTCTTC       2100

CTTGACCCTC ACCTGCGTAA GTTACTTCAA GATTTTTTTC AACCTCTCCA TCTTCATTAA       2160

CAAGAGCGGC GCCAGCATAC CAAACTTCGT TCGCAATCTC GTCAAATTTT TCAGGATGTT       2220

CTTTTTGATC TCTCGCAAAT AGCGTTTCAT TCTTATACTG ATCTTTTACC TTATGATAAG       2280

TATCCTTTGT AATCAACTTA ATTTTTTCAG GATTTGAAAA ATCAACCGAA ACAATCTTAG       2340

GGGCGGTGTT ATCAATTTTT ACAGGAATAT AGGAAACCTG CCATGGGTAA TCTTTAGTTA       2400

ATCTATATTT AAATTTATAG AAATATTGAC CTTCCGCAAT CGGTTCAAAT TGACCTCTTA       2460

TCTTAGTAGC AGGATCTTGA TTATCCTTAC TTTCTGGTGC ATTTTCTTCT CTACCTCTAG       2520

GATTATAGAT GAGTCCATCC CACTTCAAGT CACCCCAAAC TTTTAGTTTA GATGATTTGA       2580

TTCCCTTTGC ATCATTGCTT TTAGAATTTA AAATTCCTCT AATAAAGTGT TCTCTCGAAA       2640

TGACTTTTAA GTCTCTTTGA TTTTCTCCCT CTTTATTTGT ATTTACTATT GAAATCAATC       2700

CTTCTTCTGC ACTTCTTAAT ACA                                             2723
```

(2) INFORMATION FOR SEQ ID NO: 65:

539

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 11831 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

AAAAAAGTGG GAATGACTCA AATCTTCACT GAAGCTGGCG AATTGATCCC TGTAACAGTT   60

ATTGAAGCAA CTCCAAACGT TGTTCTTCAA GTTAAAACTG TTGAAACAGA CGGATACAAC   120

GCTATCCAAG TTGGTTTCGA TGACAAACGC GAAGTATTGA GCAACAAACC TGCTAAAGGA   180

CATGTAGCGA AAGCTAACAC GGCTCCTAAG CGCTTCATTC GTGAATTCAA AAACGTTGAA   ·240

GGCTTGGAAG TTGGTGCTGA AATTACAGTT GAAACATTCG CAGCTGGAGA CGTTGTTGAC   300

GTAACGGGTA CTTCTAAAGG TAAAGGTTTC CAAGGTGTTA TCAAACGCCA CGGACAATCA   360

CGTGGACCAA TGGCTCACGG TTCTCGTTAC CACCGTCGTC CAGGTTCTAT GGGGCCTGTT   420

GCACCTAACC GCGTATTCAA AGGTAAAAAC CTTGCAGGAC GTATGGGTGG CGACCGCGTA   480

ACAATTCAAA ACCTTGAAGT TGTACAAGTT GTTCCAGAAA AGAACGTTAT CCTTATCAAA   540

GGTAACGTAC CAGGTGCTAA GAAATCTCTT ATCACTATCA AATCAGCAGT TAAAGCTGGT   600

AAATAATAAA GAAAGGGGAA ATCAGTCACA ATGGCAAACG TAACATTATT TGACCAAACT   660

GGTAAAGAAG CTGGCCAAGT TGTTCTTAGC GATGCAGTAT TTGGTATCGA ACCAAATGAA   720

TCAGTTGTGT TTGATGTAAT CATCAGCCAA CGCGCAAGCC TTCGTCAAGG AACACACGCT   780

GTTAAAAACC GCTCTGCAGT ATCAGGTGGT GGACGCAAAC CATGGCGTCA AAAAGGAACT   840

GGACGTGCTC GTCAAGGTTC TATCCGCTCA CCACAATGGC GTGGTGGTGG TGTTGTCTTC   900

GGACCAACTC CACGTTCATA CGGCTACAAA CTTCCACAAA AAGTTCGTCG CCTAGCTCTT   960

AAATCAGTTT ACTCTGAAAA AGTTGCTGAA AACAAATTCG TAGCTGTAGA CGCTCTTTCA   1020

TTTACAGCTC CAAAAACTGC TGAATTTGCA AAAGTTCTTG CAGCATTGAG CATCGATTCT   1080

AAAGTTCTTG TTATCCTTGA AGAAGGAAAT GAATTCGCAG CTCTTTCAGC TCGTAACCTT   1140

CCAAACGTGA AAGTTGCAAC TGCTACAACT GCAAGTGTTC TTGACATCGC AAATAGCGAC   1200

AAACTTCTTG TCACACAAGC AGCTATCTCT AAAATCGAGG AGGTTCTTGC ATAATGAATT   1260

TGTATGATGT TATCAAAAAA CCTGTCATCA CTGAAAGCTC AATGGCTCAA CTTGAAGCAG   1320

GAAAATATGT ATTTGAAGTT GACACTCGTG CACACAAACT TTTGATCAAG CAAGCTGTTG   1380

AAGCTGCTTT CGAAGGTGTT AAAGTTGCCA ATGTTAACAC AATCAACGTA AAACCAAAAG   1440

```
                                    540
CTAAACGTGT TGGACGTTAC ACTGGTTTTA CTAACAAAAC TAAAAAAGCT ATCATCACAC     1500

TTACAGCTGA TTCTAAAGCA ATCGAGTTGT TTGCTGCTGA AGCTGAATAA TCTAAGGAGG     1560

AAATATCGTG GGAATTCGTG TTTATAAACC AACAACAAAC GGTCGCCGTA ATATGACTTC     1620

TTTGGATTTC GCTGAAATCA CAACAAGCAC TCCTGAAAAA TCATTGCTTG TTGCATTGAA     1680

GAGCAAGGCT GGTCGTAACA ACAACGGTCG TATCACAGTT CGTCACCAAG GTGGTGGACA     1740

CAAACGTTTC TACCGTTTGG TTGACTTCAA ACGTAATAAA GACAACGTTG AAGCAGTTGT     1800

TAAAACAATC GAGTACGATC CAAACCGTTC TGCAAACATC GCTCTTGTAC ACTACACTGA     1860

CGGTGTGAAA GCATACATCA TCGCTCCAAA AGGTCTTGAA GTAGGTCAAC GTATCGTTTC     1920

AGGTCCAGAA GCAGATATCA AAGTCGGAAA CGCTCTTCCA CTTGCTAACA TCCCAGTTGG     1980

TACTTTGATT CACAACATCG AGTTGAAACC AGGTCGTGGT GGTGAATTGG TACGTGCTGC     2040

TGGTGCATCT GCTCAAGTAT TGGGTTCTGA AGGTAAATAT GTTCTTGTTC GTCTTCAATC     2100

AGGTGAAGTT CGTATGATTC TTGGAACTTG CCGTGCTACA GTTGGTGTTG TCGGAAACGA     2160

ACAACATGGA CTTGTAAACC TTGGTAAAGC AGGACGTAGC CGTTGGAAAG GTATCCGCCC     2220

AACAGTTCGT GGTTCTGTAA TGAACCCTAA CGATCACCCA CACGGTGGTG GTGAAGGTAA     2280

AGCACCAGTT GGTCGTAAAG CACCATCTAC TCCATGGGGC AAACCTGCTC TTGGTCTTAA     2340

AACTCGTAAC AAGAAAGCGA AATCTGACAA ACTTATCGTT CGTCGTCGCA ACGAGAAATA     2400

ATATTAAACT AGTCGCTTAA GCAACTAGTA AATCCGCCAG CTCGGTAGCG CTCCATAGGA     2460

GTGCAAGCCG CTGTGGTACA ACATTTAAAG GAGAAAATAT AAAAATGGGA CGCAGTCTTA     2520

AAAAAGGACC TTTCGTCGAT GAGCATTTGA TGAAAAAAGT TGAAGCTCAA GCTAACGACG     2580

AAAAGAAAAA AGTTATTAAA ACTTGGTCAC GTCGTTCAAC GATCTTCCCA AGTTTCATTG     2640

GTTACACTAT TGCAGTTTAT GACGGACGTA AACACGTACC TGTTTACATC CAAGAAGACA     2700

TGGTAGGCCA CAAACTTGGT GAATTTGCAC CAACTCGTAC TTACAAAGGT CACGCTGCAG     2760

ACGACAAGAA AACACGTAGA AAATAAGGAG AACATAAATG GCAGAAATTA CTTCAGCTAA     2820

AGCAATGGCT CGTACAGTAC GTGTTTCACC TCGTAAATCA CGTCTTGTTC TTGATAACAT     2880

CCGTGGTAAA AGCGTAGCCG ATGCAATCGC AATCTTGACA TTCACTCCAA ACAAAGCTGC     2940

TGAAATCATC TTGAAAGTTT TGAACTCAGC TGTAGCTAAC GCTGAAAACA ACTTTGGTTT     3000

GGATAAAGCT AACTTGGTAG TATCTGAAGC ATTCGCAAAC GAAGGACCAA CTATGAAACG     3060

TTTCCGTCCA CGTGCGAAAG GTTCAGCTTC ACCAATCAAC AAACGTACAG CTCACATCAC     3120

TGTAGCTGTT GCAGAAAAAT AAGGAGGTAA AATCGTGGGT CAAAAAGTAC ATCCAATTGG     3180

TATGCGTGTC GGCATCATCC GTGATTGGGA TGCCAAATGG TATGCTGAAA AGAATACGC      3240
```

541

```
GGATTACCTT CATGAAGATC TTGCAATCCG TAAATTCGTT CAAAAAGAAC TTGCTGACGC      3300

AGCAGTTTCA ACTATTGAAA TCGAACGCGC AGTAAACAAA GTTAACGTTT CACTTCACAC      3360

TGCTAAACCA GGTATGGTTA TCGGTAAAGG TGGTGCTAAC GTTGATGCaC TCCGTGCAAA      3420

ACTTAACAAA TTGACTGGAA AACAAGTACA CATCAACATC ATCGAAATCA AACAACCTGA      3480

TTTGGATGCT CACCTTGTAG GTGAAGGAAT TGCTCGTCAA TTGGAGCAAC GTGTTGCTTT      3540

CCGTCGTGCA CAAAAACAAG CAATCCAACG TGCAATGCGT GCTGGAGCTA AAGGAATCAA      3600

AACTCAAGTA TCAGGTCGTT TGAACGGTGC AGATATCGCC CGTGCTGAAG GATACTCTGA      3660

AGGAACTGTT CCGCTTCACA CACTTCGTGC AGATATCGAT TACGCTTGGG AAGAAGCAGA      3720

TACTACATAC GGTAAACTTG GTGTTAAAGT ATGGATCTAC CGTGGTGAAG TTCTTCCAGC      3780

TCGTAAAAAC ACTAAAGGAG GTAAATAACC AATGTTAGTA CCTAAACGTG TTAAACACCG      3840

TCGTGAGTTC CGTGGAAAAA TGCGCGGTGA AGCAAAAGGT GGAAAAGAAG TAGCATTCGG      3900

TGAATACGGT CTTCAAGCTA CAACTAGCCA CTGGATCACT AACCGCCAAA TCGAAGCTGC      3960

TCGTATCGCC ATGACTCGTT ACATGAAACG TGGTGGTAAA GTTTGGATTA AAATCTTCCC      4020

ACACAAATCA TACACTGCTA AAGCTATCGG TGTGCGTATG GGATCTGGTA AAGGGGCACC      4080

TGAAGGTTGG GTAGCACCAG TTAAACGTGG TAAAGTGATG TTCGAAATCG CTGGTGTATC      4140

TGAAGAGATT GCACGTGAAG CGCTTCGACT TGCTAGCCAC AAATTGCCAG TTAAATGTAA      4200

ATTCGTAAAA CGTGAAGCAG AATAAGGAGA AGGCATGAAA CTTAATGAAG TAAAAGAATT      4260

TGTTAAAGAA CTTCGTGGTC TTTCTCAAGA AGAACTCGCG AAGCGCGAAA ACGAATTGAA      4320

AAAAGAATTG TTTGAACTTC GTTTCCAAGC TGCTACTGGT CAATTGGAAC AAACAGCTCG      4380

CTTGAAAGAA GTTAAAAAAC AAATCGCTCG CATCAAAACA GTTCAATCTG AAGCGAAATA      4440

ATAGACTAGG GAAGGAGAAA TTTCAATGGA ACGCAATAAT CGTAAAGTTC TTGTTGGACG      4500

TGTTGTATCT GACAAAATGG ACAAGACAAT CACAGTTGTA GTTGAAACAA AACGTAACCA      4560

CCCAGTCTAT GGTAAACGTA TTAACTACTC TAAAAAATAC AAAGCTCATG ATGAAAACAA      4620

TGTTGCCAAA GAAGGCGATA TCGTACGTAT CATGGAAACT CGCCCGCTTT CAGCTACAAA      4680

ACGTTTCCGT CTTGTAGAAG TTGTTGAAGA AGCGGTCATC ATCTAATCAA ACCTGAAAGG      4740

AGAAAACTGA AATGATTCAA ACAGAAACTC GTTTGAAAGT CGCAGACAAC AGCGGTGCTC      4800

GCGAAATCTT GACTATCAAA GTTCTTGGTG GTTCAGGACG TAAATTTGCA AACATCGGTG      4860

ATGTTATCGT GGCATCTGTA AAACAAGCTA CTCCTGGTGG TGCGGTTAAA AAAGGTGACG      4920

TTGTTAAAGC AGTTATCGTT CGTACTAAAT CAGGTGCTCG TCGTGCTGAT GGTTCATACA      4980
```

542

```
TCAAATTTGA CGAAAACGCA GCAGTTATCA TCCGTGAAGA CAAAACTCCT CGCCGGAACAC     5040

GTATCTTTGG CCCAGTTGCA CGTGAATTGC GTGAAGGTGG CTTCATGAAG ATCGTGTCAC     5100

TTGCTCCAGA AGTACTTTAA TTTTTAGGAA CAAACTAGTC CCCTAGCTTC AAGCTAGGGT     5160

GCCCTTATGG GCGTAAGAAA AATCAAGGAG AAACCTAATG TTTGTAAAAA AAGGCGACAA     5220

AGTTCGCGTA ATCGCTGGTA AAGATAAGGG AACAGAAGCT GTTGTCCTTA CTGCCCTTCC     5280

AAAAGTAAAC AAAGTTATCG TTGAAGGTGT TAACATTGTT AAGAAACACC AACGTCCAAC     5340

TAACGAGCTT CCTCAAGGTG GTATCATCGA GAAAGAAGCA GCTATCCACG TATCAAACGT     5400

TCAAGTTTTG GACAAAAATG GTGTAGCTGG TCGTGTTGGA TACAAATTTG TAGACGGTAA     5460

AAAAGTTCGC TACAACAAAA AATCAGGCGA AGTGCTTGAT TAATCACGAA GGAAAGGAGA     5520

AGTATAATGG CAAATCGTTT AAAAGAAAAA TATCTTAATG AAGTAGTTCC TGCTTTGACA     5580

GAACAATTCA ACTACTCATC AGTGATGGCT GTGCCTAAAG TAGATAAGAT TGTTTTGAAC     5640

ATGGGTGTTG GTGAAGCTGT ATCAAACGCT AAAAGCCTTG AAAAAGCTGC TGAAGAATTG     5700

GCACTTATCT CAGGTCAAAA ACCACTTATC ACTAAAGCTA AAAAATCAAT CGCCGGCTTC     5760

CGTCTTCGTG AAGGTGTTGC GATCGGTGCA AAAGTTACCC TTCGTGGTGA ACGTATGTAC     5820

GAATTCTTGG ATAAATTGGT ATCAGTTTCA CTTCCACGTG TACGTGACTT CCACGGTGTC     5880

CCAACAAAAT CATTTGATGG ACGCGGGAAC TACACACTTG GTGTGAAAGA ACAATTAATC     5940

TTCCCAGAAA TCAACTTCGA TGACGTTGAC AAAACTCGTG GTCTTGACAT CGTTATCGTA     6000

ACAACTGCTA ACACTGACGA AGAGTCACGT GCATTGCTTA CAGGCCTTGG AATGCCTTTT     6060

GCAAAATAAT ATAGGAGGTA AATCTAATGG CTAAAAAATC AATGGTAGCT AGAGAGGCTA     6120

AACGCCAAAA AATTGTTGAC CGTTATGCTG AAAAACGTGC TGCATTAAAG GCGGCAGGGG     6180

ACTACGAAGG TTTATCTAAA TTACCTCGCA ACGCCTCACC GACTCGTTTA CATAATCGTT     6240

GTAGGGTTAC GGGGCGCCCA CATTCAGTTT ACCGCAAATT TGGTCTGAGT CGTATCGCTT     6300

TTCGCGAACT TGCGCATAAA GGTCAAATTC CTGGTGTAAC AAAAGCATCT TGGTAATTTA     6360

AGATATCAAG AGCGTCAAAA CTCCAAGTAA AAATAGGAAA CTTGACGAAG AAACTAAAGT     6420

TTCTAGGAAA GTTTATCTTT TTCACACAGA GTTTAGCCCG GGTTCAATTG GGCTTGCCAA     6480

TTTGAACACG AGCTACAGCT TTGGCAAAAA AGACCAATTT GCTTTGGAGC ATTGCTTCTG     6540

CATTAAATTG TCTATTTTTG CTCGTGCTGT TACGCTCTTT GTATCATGTA TTAACTAGCA     6600

AGTGCAACTT GCAAACTACT AGTAAGAGGA GAAAAACAAA ATGGTTATGA CTGACCCAAT     6660

CGCAGACTTC CTAACTCGTA TTCGTAATGC TAACCAAGCT AAACACGAAG TACTTGAAGT     6720

ACCTGCATCA AACATCAAAA AAGGGATTGC TGAAATCCTT AAACGCGAAG GTTTTGTAAA     6780
```

543

```
AAACGTTGAA ATCATTGAAG ATGACAAACA AGGCGTCATC CGTGTATTTC TTAAATACGG     6840

ACCAAATGGT GAGAAAGTTA TCACTAACTT GAAACGTGTT TCTAAACCAG GACTTCGTGT     6900

CTACAAAAAA CGTGAAGACC TTCCAAAAGT TCTTAACGGA CTTGGAATTG CCATCCTTTC     6960

AACTTCTGAA GGTTTGCTTA CTGATAAAGA AGCACGCCAA AAGAATGTTG GTGGTGAGGT     7020

TATCGCTTAC GTTTGGTAAA ATCAAGTAC AAAGCTCGTA AAGAACAAAG CAAAATTAGG     7080

AAGTTGGAGA AGTTTGTTTA CAAACAAGCC AACTTATCTA TTTTGCACAG TTCTTAGAGC     7140

GTGTTCAGTT CAGCTCTTGA ACTAAATAAG TATCTGAACC CCGTGAAAAC TGGCCGTTCT     7200

GGCCTGACAA TTTAACAGGA GAAAATAAAC ATGTCACGTA TTGGTAATAA AGTTATCGTG     7260

TTGCCTGCTG GTGTTGAACT CGCTAACAAT GACAACGTTG TAACTGTAAA AGGATCTAAA     7320

GGAGAACTTA CTCGTGAGTT CTCAAAAGAT ATTGAAATCC GTGTGGAAGG TACTGAAATA     7380

ACTCTTCACC GTCCAAACGA TTCAAAAGAA ATGAAAACTA TCCACGGAAC TACTCGTGCC     7440

CTTTTGAACA ACATGGTTGT TGGTGTATCA GAAGGATTCA AGAAAGAACT TGAAATGCGT     7500

GGGGTTGGTT ACCGTGCACA GCTTCAAGGA TCTAAACTTG TTTTGGCTGT TGGTAAATCT     7560

CATCCAGACG AAGTTGAAGC TCCAGAAGGA ATTACTTTTG AACTTCCAAA CCCAACAACA     7620

ATCGTTGTTA GCGGAATTTC AAAAGAAGTA GTTGGTCAAA CAGCTGCTTA CGTACGTAGC     7680

CTTCGTTCAC CAGAACCATA TAAAGGTAAA GGTATCCGTT ACGTTGGTGA ATTCGTTCGC     7740

CGTAAAGAAG GTAAAACAGG TAAATAATGT TGAGTGGTTG ATCATCAACC ACCAACCTAT     7800

TTTCCAACTT TGTGCATAGC ACACGATTTA AAACTAAAGA GGTGAAAACT GTGATTTCAA     7860

AACCAGATAA AAACAAACTC CGCCAAAAAC GCCACCGTCG CGTTCGCGGA AAACTCTCTG     7920

GAACTGCTGA TCGCCCACGT TTGAACGTAT TCCGTTCTAA TACAGGCATC TACGCTCAAG     7980

TGATTGATGA CGTAGCGGGT GTAACGCTCG CAAGTGCTTC AACTCTTGAT AAAGAAGTTT     8040

CAAAAGGAAC TAAAACTGAA CAAGCCGTTG CTGTCGGTAA ACTCGTTGCA GAACGTGCAA     8100

ACGCTAAAGG TATTTCAGAA GTGGTGTTCG ACCGCGGTGG ATATCTATAT CACGGACGTG     8160

TGAAAGCTTT GGCTGATGCA GCTCGTGAAA ACGGATTGAA ATTCTAATAG GAGGACACTA     8220

GAAAATGGCA TTTAAAGACA ATGCAGTTGA ATTAGAAGAA CGCGTAGTTG CTGTCAACCG     8280

TGTTACAAAA GTTGTTAAAG GTGGACGTCG TCTTCGTTTC GCAGCTCTTG TTGTTGTTGG     8340

TGACCACAAT GGTCGCGTAG GATTTGGTAC TGGTAAAGCT CAAGAAGTTC CAGAAGCAAT     8400

CCGTAAAGCA GTAGATGATG CTAAGAAAAA CTTGATCGAA GTTCCTATGG TTGGAACAAC     8460

AATCCCACAC GAAGTTCTTT CAGAATTCGG TGGAGCTAAA GTATTGTTGA AACCTGCTGT     8520
```

544

```
AGAAGGTTCT GGAGTTGCCG CTGGTGGTGC AGTTCGTGCC GTTGTGGAAT TGGCAGGTGT    8580

GGCAGATATT ACATCTAAAT CACTTGGTTC TAACACTCCA ATCAACATTG TTCGTGCAAC    8640

TGTTGAAGGT TTGAAACAAT TGAAACGCGC TGAAGAAATT GCTGCCCTTC GTGGTATTTC    8700

AGTTTCTGAT TTGGCATAAG AAAGGGGATA AAATGGCTCA AATTAAAATT ACTTTGACTA    8760

AGTCTCCAAT CGGACGCATT CCATCACAAC GTAAAACTGT TGTAGCACTT GGACTTGGCA    8820

AATTGAACAG CTCTGTTATT AAAGAAGATA ACGCTGCTAT CCGTGGTATG ATCACAGCAG    8880

TATCTCACTT AGTAACAGTT GAAGAAGTAA ACTAATGAaG TTTTAGGGGA TGTGCACTGT    8940

ACCATCCCCT AAAACTAGAT ATAGTCATCT ATGATGACAT CGTATAGGCG AGTTGATGGG    9000

GGAGACAACC TTTTCTCCCT TATCGGCGCT AGCATTTTAC AAAAGAGGAG AAAATAAAAA    9060

TGAAACTTCA TGAATTGAAA CCTGCAGAAG GTTCTCGTAA AGTACGTAAC CGCGTTGGTC    9120

GTGGTACTTC ATCAGGTAAC GGTAAAACAT CTGGTCGTGG TCAAAAAGGT CAAAAAGCTC    9180

GTAGCGGTGG CGGAGTTCGC CTTGGTTTTG AAGGTGGACA AACTCCATTG TTCCGTCGTC    9240

TTCCAAAACG TGGATTCACT AACATCAACG CTAAAGAATA CGCAATTGTG AACCTTGACC    9300

AATTGAACGT CTTTGAAGAT GGTGCTGAAG TAACTCCAGT TGTTCTTATC GAAGCAGGAA    9360

TTGTTAAAGC TGAAAAGTCA GGTATTAAAA TTCTTGGTAA CGGTGAGTTG ACTAAGAAAT    9420

TGACTGTGAA AGCAGCTAAA TTCTCTAAAT CAGCTGAAGA AGCTATCACT GCTAAAGGTG    9480

GTTCAGTAGA AGTCATCTAA GAGAGGTGAC CTATGTTTTT TAAATTATTA AGAGAAGCTC    9540

TTAAAGTCAA GCAGGTTCGA TCAAAAATTT TATTTACAAT TTTTATCGTT TTGGTCTTTC    9600

GTATCGGAAC TAGCATTACA GTTCCTGGTG TGAATGCCAA TAGCTTGAAT GCTTTAAGTG    9660

GATTATCCTT CTTAAACATG TTGAGCTTGG TGTCGGGGAA TGCCCTAAAA AACTTTTCGA    9720

TTTTTGCCCT AGGAGTTAGT CCCTATATCA CCGCTTCTAT TGTTGTCCAA CTCTTGCAAA    9780

TGGATATTTT ACCCAAGTTT GTAGAGTGGG GTAAACAAGG GGAAGTAGGT CGAAGAAAAT    9840

TGAATCAAGC TACTCGTTAT ATTGCTCTAG TTCTCGCTTT TGTGCAATCT ATCGGGATTA    9900

CAGCTGGTTT TAATACCTTG GCTGGAGCTC AATTGATTAA AACTGCTTTA ACTCCACAAG    9960

TTTTTCTGAC GATTGGTATC ATCTTAACAG CTGGTAGTAT GATTGTCACT TGGTTGGGTG    10020

AGCAAATTAC AGATAAGGGA TACGGAAACG GTGTTTCCAT GATTATCTTT GCCGGGATTG    10080

TTTCCTCAAT TCCAGAGATG ATTCAGGGCA TCTATGTGGA CTACTTTGTG AACGTCCCAA    10140

GTAGCCGTAT CACTTCATCT ATCATTTTCG TAATCATTTT GATTATTACT GTATTGTTGA    10200

TTATTTACTT TACAACTTAT GTTCAACAAG CAGAATACAA AATTCCAATC CAATATACTA    10260

AGGTTGCACA AGGTGCTCCA TCTAGCTCTT ACCTTCCGTT AAAAGTAAAC CCTGCTGGAG    10320
```

545

```
TTATCCCTGT TATCTTTGCC AGTTCGATTA CTGCAGCcTG CGGCTATTCT TCAGTTTTTG     10380

AGTGCCACAG GTCATGATTG GGCTTGGGTA AGGGTAGCAC AAGAGATGTT GGCAACTACT     10440

TCTCCAACTG GTATTGCCAT GTATGCTTTG TTGATTATTC TCTTTACATT CTTCTATACG     10500

TTTGTACAGA TTAATCCTGA AAAAGCAGCA GAGAkCCTAC AAAAGAGTGG TGCCTATATC     10560

CATGGAGTTC GTCCTGGTAA AGGTACAGAA GAATATATGT CTAAACTTCT TCGTCGTCTT     10620

GCAACTGTTG GTTCCCTCTT CCTTGGTGTG ATTTCCATTT TACCGATTGC AGCTAAAGAT     10680

GTATTTGGTC TTTCTGATGT TGTTGCCTTT GGTGGAACAA GTCTCTTGAT CATTATCTCT     10740

ACAGGTATCG AAGGAATCAA GCAATTGGAA GGTTACCTAT TGAAACGTAA GTATGTTGGT     10800

TTCATGGACA GAACAGAATA AAAGTATTTA CTGAATCAGT AAATACTGAG GGAGTGGAGG     10860

TTTAAACTCT GACATTTGTA AGAGTTGGAT CTCCCCTCTT CTATTTTGTT TTTAAATCGG     10920

GGTGAAAAGA CTTTTTGCTT CTATTTAAAA ATAAAATAAG GAGATCAAAT CATGAATCTT     10980

TTGATTATGG GCTTACCTGG TGCAGGTAAG GGAACTCAAG CAGCAAAAAT CGTAGAACAA     11040

TTCCATGTTG CACATATCTC AACAGGTGAT ATGTTCCGCG CTGCAÀTGGC AAATCAAACT     11100

GAAATGGGTG TTCTTGCTAA GTCATATATT GACAAGGGTG AATTGGTTCC TGACGAAGTT     11160

ACAAATGGAA TCGTAAAAGA ACGCCTTTCA CAAGATGATA TTAAAGAAAC AGGATTCTTA     11220

TTGGATGGTT ACCCACGTAC AATTGAACAA GCTCATGCCT TGGACAAAAC ATTGGCTGAA     11280

CTTGGCATTG AACTAGAAGG TGTTATCAAT ATTGAAGTGA ACCCTGACAG CCTTTTGGAA     11340

CGTTTGAGTG GGCGTATCAT CCACCGCGTA ACTGGAGAAA CTTTCCACAA GGTCTTTAAC     11400

CCACCAGTTG ACTATAAAGA AGAAGATTAC TACCAACGTG AAGATGATAA GCCTGAGACA     11460

GTAAAACGTC GTTTGGATGT TAATATTGCT CAAGGAGAAC CAATCATTGC TCACTACCGT     11520

GCCAAAGGTT TGGTTCATGA CATCGAAGGT AATCAAGATA TCAATGATGT CTTCTCAGAT     11580

ATTGAAAAAG TATTGACAAA TTTGAAATAA AGCGTTTTTC ACACTTGCAA AAATCCGCTA     11640

CAAATGTTAT ACTGAGATAG TCTGACTTAT AATTGTTGTC TCTGTGTCTA GAGGCATCGA     11700

ATCGAAATTT ATGGAGGTGC TTTTGCGTGG CAAAAGACGA TGTGATTGAA GTTGAAGGCA     11760

AAGTAGTTGA TACAATGCCG AATGCAATGT TTACGGTTGA ACTTGAAAAT GGACATCAGA     11820

TTTTTAGCAGG G                                                       11831
```

(2) INFORMATION FOR SEQ ID NO: 66:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 10726 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double

546

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

```
CCCGGCATTT GAAAGCTATT CGTGAAGGAT TTATGATGGC AATGCCTTTG ATTTTAGTCG          60

GCTCTTTATT TCTTATTCTA ATCAGTTGGC CTCAAGAGGC TTTTACAAAT TGGCTGAATA         120

GTGTTGGATT GCTAAGTATC TTGACAACTA TGAATCAGTC AACAGTAGCG ATTATCTCCT         180

TGGTCGCTTG TTTCGGTATT GCCTACAGGT TGTCGGAAGG ATATGGTACA GATGGTCCGT         240

CGGCAGGGAT CATAGCCTTA TCCAGTTTTG TATTGATGGC ACCTCGTTTT TCGAGTATGG         300

TTTATGATAA AAATGGGGAG CAGGTCAAGC AGTTATTTGG CGGCGCAATA CCATTTTCTA         360

GCCTGAATGC ATCTTCTTTG TTTATGGCGA TTACTATTGG ATTGGTTACA GCAGAGATTT         420

ATCGTATGTT TATCCAGCGC GGAATTACGA TAAAAATGCC AAGTGGTGTC CCAGATGTAG         480

TAAGTAAATC ATTTTCAGCT CTTTTATCTG GTTTTACTAC TTTTGTTTTG TGGGCTTTGG         540

TCTTAAAAGG TCTTGAAGCG GCAGGAGTTG CAGGAGGTCT CAACGGACTC CTAGGTGCAA         600

TTGTTGGAAC ACCGCTTAAG TTAATTGCAG GAACGCTTCC AGGTATGATT CTATGTGTTA         660

TTGTAAACTC ATTCTTTTGG TTCTGTGGAG TTAATGGGGG ACAAGTTTTA AATGCTTTTG         720

TAGACCCAGT TTGGTTACAA TTTACTACAG AAAACCAAGA AGCTGTGGCT GCAGGACAAA         780

CACTCCAACA CATTATTACA TTACCGTTTA AAGATTTATT TGTATTTATT GGTGGCGGTG         840

GAGCGACTAT TGGTCTTGCG ATTTGTCTCT TCCTATTTAG TAAGAGTCGT GCGAATAAAA         900

CATTAGGTAA GCTAGCTATT ATACCGTCTA TTTTTAATAT CAATACAGCT ATTCTATTTA         960

CGTTTCCAAC AGTTTTAAAT CCGATTATGC TGATTCCGTT TATTGCTACT CCTACAATCA        1020

ATGCCTTGAT TACCTATGTA TCAATGGCTG TAGGATTAGT ACCCTATACA ACAGGTGTAA        1080

TCCTTCCGTG GACAATGCCA CCGATTATAG GAGGCTTCCT TGCAACAGGG GCTAGTTGGC        1140

GAGGAGCTCT ATTACAAGTT GTTTTGATTT TGGTTTCTGT AGCAATTTAT TATCCATTCT        1200

TCAAAATTGC AGATAAACGC AATCTTGAAA AGAAAAAGC TACTGTTGGA GGGAAATAAG         1260

ATGGTTATCA GAGTATTTGA TCAACAGAAA AATACTTATT CTAGCTTTGC CTTAGAGGAA        1320

TTAAGTTACT ATATGAATCG GGTCTTTAAG ACTAACATAG AGCTTGTCGA GGAGAAGGAA        1380

GCGGATATTT TTGTAGGATT AGTCAATAAA GAGGACAGAA AAGACCATGT TCTTATCTCA        1440

TTAGACAAGG GTAAGGGGAG AATTGAGTCT AATACAATTG TAGGTTTACT TATTGGAATT        1500

TACCGAATGT TTCATGAATT TGGGGTTGTG TATACTAGAC CAGGGCGCAG ACATGACTTT        1560

GTTCCAGAGT TACGATTTGA AGATTTTTTA GATAAACAGC TATCTATAGA TGAAACAGCC        1620
```

AGTTACTATC ATAGGGGAGT ATGTATAGAG GGAGCGGATT CATTTGAAAA TATACTAGAT   1680

TTCATTGATT GGCTACCTAA GATTGGGATG AACAGTTTTT TCATCCAGTT TGAAAATCCT   1740

TACTCTTTTT TGAAACGTTG GTATGAACAT GAATTTAATC CATATCTAAA TAAAGAACAA   1800

TTTTCAAATG AATTAGTACA AGAATTGAGT GATAGGTTGG ATAAAGAATT GCAAAAAAGA   1860

GGTCTTATTC ATCATCGTGT TGGTCATGGA TGGACAGGTG AAGTTTTAGG TTACTCTTCA   1920

AAATTTGGCT GGGAATCAGG TCTTAGTATT TCAGAGGAGA AGAAACCCTA TGTCGCTGAA   1980

ATAAACGGGA AACGAGAATT GTTTAATACG GCTCCGATTT TAACCAGCCT GGATTTTTCA   2040

AATCCAGATG TAGCTGATAA GATGGTAGAA ATTATCAAGG ATTATGCCAA GAAAAGACCT   2100

GATGTTAACT ACTTACATGT ATGGTTGTCG GATGCTCGTA ATAATATTTG TGAATGCGAA   2160

AACTGTAGAC AAGAATTGGT TTCGGATCAG TATATTCGTA TTCTCAATCA ATTGGATAGG   2220

GCTTTAACGA GTGAGGGATT AGATACAAAG ATTTGTTTTC TGCTTTATCA TGAGTTGTTA   2280

TGGGCACCTC AGAAAGAAAA ATTAGATAAT CCTGAACGCT TTACCATGAT GTTTGCACCG   2340

ATTACAAGAA CATTTGAAAT GAGTTATGCA GATGTAGATT TTGACAATTC CATACCTACG   2400

CCTAAACCTT ATATGCGTAA TAAAATTATA CTTCCGAATT CTCTTGAGGA AAATTTATCT   2460

TATCTTTTTG AGTGGCAAAA AGCATTTAAA GGAGATAGTT CGTATATGA CTATCCTTTA   2520

GGGCGTGCTC ATTATGGCGA TTTAGGCTAT ATGAAAATTA GTCAAACTAT TTACAGAGAT   2580

GTATCTTATC TTTCCAACCT ACATTTGAAC GGGTACATTT CGTGTCAAGA ATTACGTGCC   2640

GGATTCCCTC ATAATTTTCC TAATTATGTC ATGGGGGAAA TGCTCTGGAA GAAGACAAGA   2700

AGTTATGAAG AATTGATTGA AGAATACTTT TCTGCTTTGT ATGGGGAAAA TTGGCAGTCT   2760

GTTGTTGAAT ATTTAGAAAA ATTATCCATT TATTCCTCTT GTGATTATTT TAATGCAATT   2820

GGCAGCCGTC AAAGTGATGT TTTAGCGAAT CATTATTATA TAGCTTACAA TCTAGCTGAT   2880

AATTTTTTAC CAATTATTGA GGAAAATATT TCTAAGTTAT TAAATAGTCA AAAGGATGAA   2940

TGGAAACAGC TCAGTTATCA TCGTGAATAT GTTGTTAAGA TGGCGAAGGC TTTATATCTT   3000

CAAGCAACTG GAAAAACAAG GCAAGCTCAA GATGAATGGA GAAATGTGTT GAATTATATC   3060

CGTGGGCACG AATTGCTATT TCAATCTAAT TTGGATGTTT ATCGTGTAAT TGAAGTAGCA   3120

AAAAATTACG CTGGTTTCCA CTTATAAATC ATAAGTATAG AAAATGAACT AAGGTATTCA   3180

GAGAAGATTG ATCCTAAATA TTATGAAATT TAAGGATTTT TAAGATATTT AGGGTCAACT   3240

TTCTATTTAT ATCGTAGCGA AGTCATTTTA ATAATGATGT GTAAAAGATG GATCAAGATT   3300

GAGGAGGAAG AAAGATGAAA TCAAAAGAAG AAATAAATAT GCTTGGTTTT ACAATTGTCG   3360

548

```
CTTACGCAGG AGATGCAAGG TCAGATTTGA TGGATGCTTT GGCGTTTGCG AGAGATGGAT    3420

ATTTTGAACA GGCAAGAGAA TTGGTTGAGT CTGCAAACGA CTCAATAGTG TCTGCCCATC    3480

GAGAACAGAC TAATTTATTA GCGGAGGAGG CATATGGAGA TAATTTTGAA GTGAGCTTTA    3540

TTATGATTCA TGGTCAAGAT ACTTTGATGA CAACGATGCT ATTGTATGAT CAGGTAAAGT    3600

TTTTTATTGA TGAATATGAA CGAATTCGAA AGATTGAAGA ACATATTGGT TTGCAATGAG    3660

GATTAGTCAT GGAAAATTTA CAGGTTAAAG CCTTACCGAA GGAGTTTTTA TTAGGAACTG    3720

CTACCGCTGC TTATCAAGTA GAGGGTGCAA CTAGGGTAGA TGGCAAAGGA ATAAATATGT    3780

GGGATGTTTA TTTGCAAGAA AATAGTCCGT TCTTACCAGA TCCAGCTAGT GATTTTTATT    3840

ATCGTTACGA AGAGGATATA GCTTTGGCGG CAGAACATGG TTTGCAGGCT TTGCGTTTAT    3900

CTATTTCTTG GGTTCGTATA TTTCCTGATA TAGATGGGGA TGCTAATGTA TTAGCTGTTC    3960

ATTATTACCA TAGAGTTTTT CAGTCTTGCT TAAAACATAA TGTGATTCCG TTTGTTTCTT    4020

TACATCATTT TGATTCGCCT CAGAAAATGT TAGAAACAGG GGATTGGTTG AACAGAGAGA    4080

ATATTGATCG TTTCATACGA TATGCTCGCT TTTGTTTCCA AGAATTTACA GAAGTCAAGC    4140

ATTGGTTTAC AATCAATGAA CTGATGTCTC TTGCTGCAGG TCAATATATA GGAGGTCAGT    4200

TTCCTCCAAA TCATCATTTT CAATTATCTG AAGCAATTCA AGCGAATCAT AATATGTTGT    4260

TGGCGCATGC TCTTGCAGTC CTCGAATTTC ATCAATTAGG GATTGAGGGA AAGGTAGGTT    4320

GTATTCATGC TTTAAAGCCA GGCTATCCTA TTGATGGGCA AAAAGAAAAT ATTTTGGCAG    4380

CTAAACGGTA TGATGTTTAT AATAATAAAT TTCTATTAGA TGGAACTTTT TTGGGCTACT    4440

ACAGTGAGGA CACGCTTTTT CACTTGAATC AAATATTGGA AGCTAATAAT TCTAGCTTTA    4500

TTATTGAAGA TGGTGATTTA GAAATTATGA AGAGAGCTGC ACCTCTTAAT ACGATGTTTG    4560

GGATGAATTA TTATCGTTCA GAATTTATTC GTGAATACAA AGGTGAAAAT AGACAAGAAT    4620

TTAATTCAAC AGGAATAAAA GGACAGTCTT CTTTTAAATT AAATGCTCTA GGTGAATTTG    4680

TAAAAAAACC TGGTATTCCG ACAACAGATT GGGATTGGAA TATTTATCCT CAAGGGTTAT    4740

TTGATATGTT GCTTCGTATC AAAGAAGAAT ATCCTCAACA TCCGGTCATT TATTTAACTG    4800

AAAATGGTAC AGCCCTTAAA GAAGTTAAGC CAGAGGGCGA GAATGATATT ATTGATGACA    4860

GTAAGAGAAT CCGTTATATT GAGCAACATT TACACAAAGT TTTAGAGGCT CGAGATAGAG    4920

GAGTCAATAT TCAAGGCTAT TTTATATGGT CTTTGCAAGA TCAATTTTCT TGGGCGAATG    4980

GCTACAATAA GCGATATGGT CTTTTCTTTG TTGATTATGA AACACAGAAG AGATATATTA    5040

AGAAAAGTGC TCTTTGGGTA AAAGGGCTAA AACGGAATTA AGGTTAGCGA TTTGACTGAT    5100

GTTTAATATG TTTTTAAATAT GAGGTTGAAT TTTTTATAGG AGGAGTTTTA TGGATAAGCT    5160
```

549

```
AGTCGCTGCC ATTGAAAAGC AACAAGGGAA ATTTGAAAAA ATTTCTACTA ATAACTATAT    5220

GATGGCTATT AAAGATGGAT TCATTGCTAC TATGCCTTTA ATTATGTTTT CAAGCTTTTT    5280

GATGATTATT ATTATGATTC CTAAAAATTT CGGAGTAGAG TTACCGAGTC CAGCTATTGT    5340

CTGGATGAGA AAAGTGTATA TGTTAACCAT GGGAGTTTTG GGTATTATTG TTTCAGGGAC    5400

TGTTGGAAAG TCATTAGTTG GAAATGTTAA CAGAAAAATG CCTCACGGAA AGGTAATAAA    5460

TGATATTTCT GCAATGTTGG CAGCCATATG TAGTTATCTG GTATTAACTG TAACGCTTGT    5520

AGTTGATGAG AAGACGGGAT CTACAAGTTT GTCGACAAAC TATTTAGGAT CTCAAGGATT    5580

GATAACTTCG TTTGTCAGTG CCTTTATTAC TGTAAATGTT TACCGATTCT GTATTAAGCG    5640

AGACATTACT ATTCATTTAC CTAAGGAAGT TCCTGGGGCT ATATCACAAG CTTTTAGAGA    5700

TATTTTCCCT TTTTCTTTTG TTTTACTTAT TAGTGGTTTG TTAGATATTG TATCTCGGTT    5760

TAGTTTAGAT GTTCCTTTTG CCCAAGTATT TCAACAACTA TTGACTCCTA TTTTTAAGGG    5820

GGCAGAATCA TATCCTGCTA TGATGTTGAT TTGGTTTATG TGTGCTTTGC TTTGGTTTGT    5880

TGGAATTCAT GGACCATCTA TTGTCTTACC TGCTGTTACA GCTTTGCAAC TGAGCAATAT    5940

GGAAGAGAAT GCTCAACTTC TTGCAAATGG GCAGTTCCCT TATCATTCTT TAACACCTAA    6000

TTTCGGGAAT TATATCGCTG CTATTGGAGG AACGGGGGCT ACCTTTGTTG TACCATTTAT    6060

TTTGATTTTC TTTATGCGGT CTAAACAATT AAAAATCGGTA GGTAAAGCTA CAATTACTCC    6120

TGTTTTATTT GCGGTAAATG AACCTCTTCT ATTTGGTATG CCTGTTATTT TGAATCCCTA    6180

TCTTTTTGTC CCTTTTTTGA TGACTCCACC AGTGAATGTA TTTCTAGGAA AGGTCTTTAT    6240

TGATTTCTTT GGAATGAATG GATTTTATAT CCAGTTACCT TGGACCTTTC CTGGTCCCTT    6300

GGGATTGTTA ATTGGAACGA ATTTTCAACT TATCTCCTTT GTATTTTTAT CTTTGATTTT    6360

AGTTGTCGAC ATATTGATTT ATTTGCCATT CTGTAGAGCG TATGATAGAC AGTTACTGGT    6420

GAAAGAAGAT ATTGCAAGCT CAAATGATAT TATTTTAGAG GAGGATACAA GTGAAATAAT    6480

TCCTGGTGAG ATAGATGAAA TAAAAAGTAA GGAGTTGAAA GTACTGGTTC TTTGTGCAGG    6540

GTCTGGAACA AGTGCGCAAT TAGCCAATGC AATTAACGAG GGGGCTAACT TAACAGAGGT    6600

TAGAGTGATT GCGAATTCAG GAGCGTACGG AGCTCATTAT GATATTATGG GTGTTTATGA    6660

TTTAATTATT CTGGCCCCAC AAGTTCGGAG TTATTATAGA GAGATGAAGG TGGATGCAGA    6720

AAGATTAGGT ATTCAGATAG TTGCTACCAG AGGAATGGAA TATATTCATT TAACAAAGAG    6780

TCCAAGTAAA GCCTTACAAT TTGTATTGGA GCATTACCAA GCTGTGTAGT AAGTTTTTCC    6840

ATCTTTTATT TGAGTAAAGA TTTTGTTTAC AGATAGGCTT GGATTTAAAA ACGTTCCCCC    6900
```

```
                                         550
TTTTTTAATA TAAGAATCCC TCTTTCACAA TTGTAAAAAG AGGGATTTTG TATTTTATCT    6960

CTTAGACCAA GTTCTCTTCA TAAAGAGAAG GAGGATTGGG TAAATCTCCA AGCGCCCTGC    7020

AATCATTGCA AAGGATAGGA GAATTTTTGA GATGGGACTA AAGATTGAGA AACTAGAAGT    7080

GGTTCCTAGA ATAGGCCCGA TATTATTGAA ACAGCTAAAG ACAGCGCTGG TCACGACCAG    7140

AAAATCATTG CTATCTAGGC TGACAATAAA GATAAGCGCT AGCAAAATCA TAGCATAGAT    7200

GACAAAGTAC TTGAGAATCT TATGCTGGGT ATCTTTGTCA ATCACCGTTT TATTAACATG    7260

GAGGGTCAAA ACACGGTGGG GCGATAGGAT TGACAAAATT TGGTTTTTGG CAATTTTTGA    7320

AAGGATGAGG CCTCGAATAA TCTTGAGTCC ACCTGCAGTT GATCCAGCAG AGCCACCGAT    7380

TGCCATGAGG AAAAGGAGGA TAAACTGGGA GAAGAGGGGC CAGTTGGTAA TATCTCCATA    7440

TCCAAAACCA GTTGTTGTAA TGATGTTGGA AACCTGGAAG AAGGTCATTT CAAAGCTCTT    7500

TGAAAACCCT GGGTAGAGGT AGAGGGTGTT GAGGCTAATC AAGCCTGTAG AAACCAGTAC    7560

AATGACCAAG TAAGCCCTAA GCTCTTCATC TCCAAAGAAG GCCTTGATGC GACGGAGCAT    7620

GAGGTAGTAG TAGAGGTTGA AATTTACTCC AAAAACCAGA ACTCCGATAC TGACCAGATA    7680

GGTAATCAGT GAGCTGCCAT AGTGGGCAAT TCCGTCGTTA TAGACGGTAA AGCCTCCAGT    7740

TCCCGCTGTC CCCATAGCAA TAACAAAACT ATCGTAGAGA GGCATACCGG CTAGATAATA    7800

GATGATGACA AAGAGGGAGA AGAGAGCTAG ATAAAGGAGA TAGAGAATCT GGGCAGTGTT    7860

TTTTAGTTTG GATACAACCT TGCCAAAAAC AGGACCTGGA ACGTCAGCCT TCATCACCTC    7920

TAGGTGGCTA TTTTTGGCAT TGTCCATAAT AGCAAGTGCA AAAACAAGCA CTCCCATCCC    7980

TCCAATCAAG TGGGTAAAAC TTCGCCAGAA GAGGAGGGAA CGGCTGAGAA CCGAAACGTC    8040

GTTCAAAATA CTTGCTCCAG TAGTTGTAAA TCCAGAACTA ATTTCAAAAA AGGCATCAAT    8100

AAGGCTGGGG ATTTGCCCAG AAAAGACAAA GGGGAGACCA CCAAAGAAAG ACCAAAGGAT    8160

CCAACAGAGG GCAACGATCA AGACTCCCTC CTTGGCATAA ATCCGTTGAT TTTTTGGCTT    8220

CTGTAAACTC CCTGAACCGC CTAACAATAC GAGAATCCCT ATGGTCGAAA AGAGGGCTGT    8280

AAAGACTTGG CTCGATTCAC GGTAATAGAC AGCAATCGCA ACAGGAACCA AAAGAAGAAC    8340

AGCTTCAATC AAAAGTAATT TTGAAAGGAG GTAACGAATC ATACTTTTAT TCATTTCTTA    8400

CCTCGCGATC AAGTCATAAA TCTTGGTGAT GTTTGGCAAC AAGGTTGTTA CTAGGAGCTT    8460

GTCTCCAACT TCCAACATAT CCTCCCCAGT TGGGAAAATA GTCTTGCCCT TTCGAATAAT    8520

GGCTGCAATA AGAACCCCTT TTTTCAATTT CAGTTGAGAA AGAGGTTTGG CAGTCATTTT    8580

ATTGGCTTCC TTGATATGGA ATTGCAGGGT TTCGATTTGG CCATTGGCTA GATGGTGCAT    8640

AGCTTGAAGG TCTGAATACT GGGCATTAAC TCGACCACGA ATAAAGTGCA TAATCGTATC    8700
```

551

```
TACAGCGATG CTTTTAGGTG TGATGATACT TGAAAAATCA GGCGCATTGA TAATCTCGAG    8760

GAGACTGGTA CGATTGACCT TAGTAATATT TTTCTGTACA CCTACCCTGT CAAGGAACAT    8820

AGATGTAATC AGATTTTCCT CATCGACTCC TGTTAGAGTC GCAACGGCAT CATAGTGTTG    8880

AGCACTTTCT TCCAGCAGGA TATCTTTTGC GGTTCCATCT CCTTGAACGA TGTAGAGATT    8940

TGGGAATTTC TCGCTAAAGA AGCTGGCGAT TTCAGGATTG ATTTCAATGA CTTTTGTATC    9000

GATACGACTA TCTTTGAGAA TACCAAGTAG ATAATAGGCA ATTCTACCTG CCCCAACGAT    9060

GAGAAGGCTC TTCACGGCGC GTGATTTAAA ATAATTATGG AAGAGTATCA TATCGACACG    9120

GTTACCAGTG ACAAAGATTC TATCTTTATC CTGTACAGTC ATGTCACCGC TTGGAATGAT    9180

AATTTGATGA TCCCTCTCTA TCGCACAGAC AATGACATTA CCAAATTTTT TACGAAAATC    9240

AGAAATGGGC ATTTGGCAAA GACCGCTGGT GGACTTGACG ACAAATTCCA TGAGGCTAAC    9300

GCGTCCACCA GCAAAGCGTT CGACAGACAG GGCGTTGGGG AAGTCAATGA TATTCGCGAT    9360

AGCGCGGGCA GCCAAGAGCT CAGGATTAAC GATAAGAGAA AAACCGAGAA TATTCTTTTC    9420

CTTGAAATAA GAGTTAGAAT ATTCAGGGTT CCGCACCCGA ACGATAGTTT CTTTAGCTCC    9480

CATTTTCTTG GCTAGAACTG CTGCAATCAT GTTGACTTCA TCGTGCTCAG TCAGGGCGAT    9540

AAAGATATCA CAATCTTGGA CGCTGGCTTG CTCAAGAATG GCAAAATCGG CCCCGTTACC    9600

AAGGATACCA ATGATATCAA AGCGACTGAC AATATGATTG AGAACAGCTT CGTCTTGCTC    9660

AATCAGCAAA ACATCATGCT TTTCTGCAAC CAAGGAGCGA CAGAGGGCAA AACCAACTTT    9720

TCCCCCTCCG ACAAGGATAA TTTTCATAAT AAAACCTACT TTTTCATGAT GTAACTATCA    9780

TACCCTTTTT CAAGAAAAAA TGCACCTACT AGCTAATAAC AAGAGTTTTT AGTGAAAATT    9840

CGCTATAAGG TAAAACTATA CCCTAACCAA TTGAAATAGC TATTAGCGAC TTTCTCTGAA    9900

ATATGGTATG ATAAAGGATA TACAAGGAGA TAAAATGAAT AATAATTTAC TGGTATTACA    9960

ATCAGACTTT GGTCTGGTTG ATGGTGCGGT ATCGGCTATG ATTGGAGTGG CTTTAGAAGA    10020

GTCTCCAACC TTAAAAATAC ATCACTTGAC GCACGATATC ACGCCTTATA ATATTTTTGA    10080

GGGGAGCTAT CGTCTCTTTC AGACGGTGGA TTACTGGCCT GAGGGAACGA CGTTTGTATC    10140

GGTTGTCGAT CCAGGTGTCG GTTCGAAACG TAAGAGTGTA GTTGCCAAGA CTGCAAAAAA    10200

TCAATACATT GTCACGCCAG ATAATGGGAC GCTTTCCTTT ATCAAGAAAC ACGTTGGCAT    10260

TGTAGCCATT CGTGAGATTT CTGAGGTGGC CAATAGGCGT CAAAACACAG AGCATTCTTA    10320

TACCTTCCAC GGTCGTGATG TCTATGCCTA TACTGGTGCT AAACTGGCCA GTGGTCACAT    10380

TACTTTTGAG GAAGTAGGGC CAGAGCTCAG TGTGGAACAG ATTGTAGAGC TTCCAGTCGT    10440
```

552

```
AGCGACCATC ATAGAAGATC ATCTGGTGAA GGGAGCCATT GATATTCTGG ATGTGCGTTT    10500

CGGTTCGCTT TGGACCTCTA TCACACGGGA AGAATTTTAC AAGCTGGAAC CAGAATTTGG    10560

TGATCGTTTT GAAGTGACCA TCTATCATGC TGATATGCTG GTCTATCAAA ATCAGGTTGT    10620

CTATGGCAAA TCATTTGCAG ATGTGAGAAT TGGGCAACCs ATcTTTACrc TCAGCaTCTt    10680

CGATTAGCTG GGCAATTCGT TCTAGTTGGA TTTCGTCAAT CAAGGT                   10726
```

(2) INFORMATION FOR SEQ ID NO: 67:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7163 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

```
TTATCTTTAA CGATATCAAT CAAGATCTGG TCAATAAAGG GATTGGGGCT TATCGTGAAG        60

TTGGCATCCA AGCCCATGGA TATGTCTGTG ACGTGACAGA CGAGGACGGT ATCCAAGCCA       120

TGGTCAAGCA AATCGAACAA GAGGTTGGTG TCATTGACAT CCTCGTTAAT AACGCTGGTA       180

TTATCCGCCG AGTTCCAATG TGCGAAATGA GCGCCGCTGA TTTCCGTAAG GTCATCGATA       240

TTGACTTAAA CGCACCATTT ATCGTTTCAA AGGCAGTTAT TCCTTCTATG ATAAAGAAAG       300

GGCATGGAAA GATTATCAAT ATTTGTTCGA TGATGAGCGA ACTGGGACGT GAAACAGTTA       360

GCGCTTATGC TGCTGCTAAA GGGGGCTTGA AAATGTTGAC CCGCAACATT GCGTCTGAAT      .420

ACGGTGGAGC CAATATCCAA TGTAACGGAA TTGGACCGGG TTATATTGCC ACTCCTCAAA       480

CAGCACCTCT TCGTGAATTG CAAGAAGATG GTTCTCGCCA CCCATTTGAC CAGTTCATCA       540

TTGCAAAAAC ACCTGCTGCA CGTTGGGGAA ATACTGAAGA TTTGATGGGC CCTGCTGTCT       600

TTCTCGCTAG TGATGCCAGC AATTTTGTCA ATGGCCACAT CCTATATGTA GATGGCGGTA       660

TCTTAGCCTA CATCGGAAAA CAACCTGAGT AAAAATAGAA AGAAGATCTT ATGAAAATCG       720

CATTAATCAA TGAAAATAGT CAAGCTAGCA AGAATCACAT TATTTACGAT AGTCTAAAAG       780

AAGCGACAGA TAAAAAAGGC TACCAATTAT TTAACTATGG TATGCGTGGA GAAGAAGGAG       840

AAAGTCAATT AACTTATGTG CAGAACGGAC TAATGGCTGC CATCCTTTTA AATACAAAGG       900

CAGTTGACTT TGTTGTTACC GGCTGTGGTA CGGGTGTAGG GGCTATGCTT GCTTTAAACA       960

GCTTCCCTGG TGTTGTCTGT GGTCTAGCAG TGGACCCAAC TGACGCTTAC CTTTATTCTC      1020

AAATCAATGG TGGTAACGCC TTGTCTATCC CTTATGCCAA AGGATTTGGC TGGGGGGCAG      1080

AACTGACCCT CAAATTGATG TTTGAACGCT TATTTGCTGA AGAAATGGGC GGTGGCTACC      1140
```

553

```
CAAGAGAACG TGTAATCCCT GAACAACGCA ACGCTCGTAT CTTAAACGAG GTGAAACAAA        1200

TCACCCACAA TGATTTGATG ACCATCCTTA AAATAATCGA CCAAGACTTC CTCAAAGACA        1260

CCATCTCTGG CAAATACTTC CAAGAATACT TCTTTGAAAA CTGCCAAGAT GATGAAGTTG        1320

CTGCTTATTT GAAAGAAGTA TTAGCCAAGT AAAGCTATTC TAAACCAGAA AGGAACTAAT        1380

GGATGACGAA AATATTACTG TTTGGCGAAC CATTAATTCG AATTTCACCA TTAGATGCCA        1440

CCAGTATCGG CGATCATGTT GCCAGTTCGA CTTATTTTGG CGGATCAGAA ATTAACATCG        1500

CTTGTAATTT GCAAGCCCTG GGTATCTCAA CGAAAGTTTT TACCGCACTC CCTGCCAACG        1560

AGATTGGAGA TCGTTTTCTC ACATTCTTGA AACAGCACCA AATCGATACC AGTTCAATCT        1620

GTCGGCTTGG CGATCGAATC GGCCTCTACT ATTTGGAGAA CGGCTTTGGT TGTCGTCAAA        1680

GTGAAGTTTT CTACGATCGT AAGCATACGA GTATCAGCCA GATTCGGCCA AACATGCTAG        1740

ATATGGATTC TCTCTTTCAG GGGATTAGCC ATTTTCATTT TAGTGGAATC ACCGTAGCTA        1800

TCGGTCAAGA GGTCCGTGCG ATCCTTCTCC TACTCTTGGA AGAAGCCAAG CGCCGAGGAA        1860

TTGTCGTTTC AATGGATCTC AATCTGAGAA CAAAGATGAT TTCAGTCCTA GAAGCCAAGT        1920

ATGAATTTTC TAAGTTTGCA CGTTTTACTG ACTATTGCTT CGGTATTGAT CCTCTCATGA        1980

TTGATGACCA AAATCTAGAG ATGTTTCCAA GAGACAGTGC TAGCCTAGAA GAGGTGGAAA        2040

ATCGCATGCG ACTTTTAAAA GAAGCCTATG GTTTCAAGGC CATTTTCCAT ACCCTCCGCT        2100

CTACTCATGA GCAAGACAAA AATGTCTATC AAGCCTATGC TCTAGAAGAA CTATTTGAAG        2160

AGTCTGTCCA ACTAAAAACT GCAGTCTATC AACGAATTGG TAGCGGGGAT GCCTTTATAT        2220

CTGGTGCCCT TTACCAACTA CTCCATCATT CCTCCCTAAA AACTACCATT GACTTTGCAG        2280

TTGCGAGCGC AACTCTCAAA TGCACTCTTC CAGGAGACCA TCTCTCCACT TCCTCAACTA        2340

GTATTGAAAA TTTACTGGCA AATGCACAAG ATATCATTCG TTAGGAGAAT TACATGACCA        2400

AATCAGATAC GATTATTGAA CTAAAAAAAC AAAAAATTGT CGCTGTTATT CGAGGAAATA        2460

CAAAGGAAGA AGGACTACAA GCCTCGATTG CTTGTATCAA GGGCGGTATC AAAGCTATTG        2520

AAATCGCCTA TACCAATCAG TATGCAGGAC AAATCATCAA GGAACTTGTA GACTTGTATC        2580

AGGACGATCA GAGTGTTTGT ATCGGTGCAG GTACTGTGCT TGATGCCGTA ACTGCTAGAG        2640

ATGCCATTCT AGCTGGAGCA AATTACGTTG TTTCTCCATC TTTCCATGCT GAAACTGCGA        2700

AAATGTGCAA TCTCTACAGC ACACCGTACA TTCCAGGCTG TATTACCCTC ACAGAGATCA        2760

CGACTGCACT TGAAGCCGGT AGTGAAATCA TCAAACTCTT CCCAGGTAGT ACTCTCAGTC        2820

CAGCATATAT CTCTGCAGTC AAGGCACCGA TCCCACAAGT TTCCGTAATG GTAACCGGAG        2880
```

554

```
GAGTCGGCCT AAACAACATC CCTCAATGGT TCGCTGCTGG TGCAGATGCC GTTGGAATTG     2940

GTGGCGAACT CAATAAACTC GCTTCCCAAG GCAACTTTGA CCGCATCAGC GAGATTGCCC     3000

AACAGTATAT TACACTCAGA TAAAATCATA ACTACCCGTC TAACGGGTGG TTTATCTCAG     3060

AGCTATAAGC CCAAATCATC AGCCAGCGCC TAAAGACGCT GGCTTTCACG TTGTTCAAGC     3120

CTTATTGCTC TTGACTCGTC ACTTGCCTCT TTAAGAGACT TTGGTATTAC TTACCACTAT     3180

CCCTAAAGGG ATCCTCATAT TCTTTTACAC TCAATTTATC TAGTGCTATA GTAGATTGAA     3240

ACTGGAATAG TACACCTCTG CTTCTAAAAC ATTGTTAAAA ATCGATTTGA CTGTCCTGAT     3300

CGATTTTGTC CTGTTCTTAT TTCATTTTAC TATATATCAT ACTTTACTCG TTCTCAAATT     3360

TTCATACTCA TGAAGAAATC ATCCACTCGA TAATTTCTTT AATCTTGACT ATATTTCTTA     3420

ATTGTGGCTT CATTAAGCCC TACTGGACTT ACATAATAAC CTTCCTCCCA GAAATGCCGA     3480

TTCCCAAACT TGTACTTGAG ATTGGCGTGT TTGTCAAACA TCATGAGTGC ACTTTTGCCT     3540

TTTAAATACC CCATAAAACT TGAAACACTT AGCCTCGACG GAATACTGAC TAACATGTGT     3600

ACATGGTCTG GCATTAAGTG ACCCTCGATC ATTTCAACAC CTTTATAACT ACACAAGCGA     3660

TGAAATATTT CGTCTAAACT ACTTCTATAT TGATTATAGA TGACTTTTCG TCTATACTTA     3720

GGGGTGAACA CAATATGATA GAACACCTCC ACTTTGTGTA TGATAAACTA TGAGTCTTTT     3780

GTGCCATATT TTTTCTCCTT TCGCTTTACA ATTGGATTGA ACACCTTTAT TGTATCGCGT     3840

TTGGAGTTTT TTTGGTATAA CCTTCGACGC GCACCCGTAT AGCGGGTGGT TGTTTTGTCT     3900

CGCACCTCAC GGAGCGAGAC GGACTAATAT AGTGGAGTGA AATAGGATAC GAACAAATTG     3960

ATTAGGAAAA TCAAATGAAT TTATAGAAAT CTTTTAGCAG TTATAACGTT CTATTCTAGT     4020

TTCAAAACGC TATAGTCACA TAATAATGAA GTAAAAAAGG ATAAGTATCA ACTTATCCTT     4080

TTTTAAAAGA AAAATCCGAA GATATTTGGC CTTCTTCGGA TTTTTTCTAT TTTCCACAGT     4140

TTCATGTAAT TCATCTAGAT GATGAACAAA TTAGTTGTTC TTTCCTCTAC GGAATAGATA     4200

AAATGCCCCA AGTAGCAAGA ACCCTAGACT TGCCAAGATT GACTGACCTT CTCCTGTCTG     4260

AGGGAGATTC TTTTGATCCG AATGGTTCTT TTCCTCTTCA GATTTTTCCT TTTCTTTTGA     4320

ATTCTGTACT TGTGGCTGAG CTGCTTGCTC TAGCTTTTTA AAGACTTCCT GATCTGGAGC     4380

TGATTCCTGG GTTTCAGGAT TATAGTAGGC AATCTTATAT TCATCCCCTT CTTTTCGAAT     4440

GGTATAGACT CCACGTTTCA AAACTTGGAA TTGGTTGGAA ATAGTAGAGA CAGAATCATC     4500

ATATTTCACA ATGCCCCAAA CTCCTTGTTT AGCATCATAA ACAGACTGAA GGGTTTCGTT     4560

ATTTTCGATG AGGCTACTTT CTAACTCTTT TATCATTTGA TTGAAGGTGG CACGATCCAC     4620

GTTAGGAATG AGCATATAGC CATAAGAATC TCTATTTTGC TTATGAGCCT GACTAATCGT     4680
```

555

```
AAGAAATTCA TTTTCAACTT CCTTGTCTGA CTGTCCTTCA TTGATATCCT TCCAGGCTCC       4740

CTTTTGCAAA GCCTTACTCA TACTGATTGA ACTCTTCTTA AAGAAAAAGT AACCAATATT       4800

CTTTTTCGAA TCGAACGATT CTAAAAAGAC ACTTTGGGTT TCAGGATAAT CCTTTTCTTG       4860

TTCTGTAAGG GAGGCTTCTT TATCATTGAC ATAGACTTTA TATGGATTAC CTGATTCCAG       4920

TTTTCTCTGG TCAATTGTAG TTGCAGCAGT ATCTGTTGAA GTGTTTTGGA TATTGCTTCC       4980

TAAAAAGGCG ATCTTATCCT TTAGCATAAA CCAGCTCTTA TGAGCAGTCA ATGTTTGATT       5040

CCAGTTGGTG AAATCCATGG TTGCTGTCGC ATTGGCATCA TCTAGTTTGC TCGTTCCAAC       5100

GAAAGCAGAC GGTAAAACTT TACCTGTATC GCTATCCGCT CTCTTAGCAT CCGTCTCTGT       5160

TGTACCAGGC ATCTTATATG GATTAACTGT TGGCCAGTAG CCATCGCTAT AGTGACTCAA       5220

ATCGCCATTG TAAAGATAGA ACATCCCATC ACTCGTATAC CAACCACGTT TATTTTCCTT       5280

GTTCATGTGT TCGTAATTCA AGGTACGACT GGAAAAGAGT GACAAGCCAA ATCCAAACCC       5340

TTTCTCTGCA TTGTACATGG CTGTTTTATC CATCTTGTTA AAGGCAGATA GGTAACTTGG       5400

TCTTGGAACA CTTGCGACTC CTGCATCACT TAACAAGGAT TGCATCAAAC TGATATCCTT       5460

ATAAGTCTTC AAATTCTTAA AGACATCATA ATAACTATCC GATTGAACAA TGGTCTTCAC       5520

AAGACTCTGC AAACATTGTT TGGTTTCTCC TTCAGACATA TCCGCTATTC GGTGAATCCC       5580

TCTTAGTACT TCTACTGCGG CCACGTGCCC CTCGCTATTT GCACGACTGA TCGAGCGTCC       5640

ACGACTCATA TCCATCAACT CTCCATTCAC CAGCAAAGGA GCAAACGATT TATCAATCCA       5700

GTGGTACATG GTTTGCATTT TATCTTTATC GATTGGATTC TTGGTCTTTT GAATGACTGG       5760

CAACAGTTGA GACAGGCCAT CAATCAAAAC ATTCCCATAA GCACCCGTAT AGGCAACATT       5820

GGTGTGGTCG ATATAGGATC CATCTTGATA AAAACCTTCA CCTTGGTCTA CCAACTTGAA       5880

CACTTGCTCA ATCGAGCGAA TGGTAGAAGA AATTTCTTGA TCATCCTTAC GCAGTAAACC       5940

AGCTATTACT TTTACCCTTC CCATATCAAC TAAGTTTCCA CCTAGAGCCT TGAATGGGTT       6000

ATCAGTCGTC TTTCGGAAAT GTTCGGGATC TGGTACAAAT TTTTCAATCA CATCTGTATA       6060

TTTTTTAATT TCCTCATCAG AGAAGTATTC TTTCATCAGA GACAAGGTAT TGTTGATGGC       6120

ACGAGGTGTA CCGATTTCAT AATCCCACCA GTTCCCAACA ATGCTCTTTT CACTATTGTA       6180

GACATGTTTA TGCATCCATT CCATGGAATC CCTGACTGTT CGAACGACAG TTTCATCTTG       6240

ATAATAACGA GAAGAAGGAT TGGTCACTTG CTTGGCCATC TCCTCCAATT TCCGATAAGT       6300

GGCAGTCAGA TTTGCAGACG TTTTATAATT TGAAAATTTT TCCCACAAAT AGGTGCGGTC       6360

CGCCTGACTT GAAATACTGG ATAGGCTATC AGCTACCTTT CCTTCCAATT CCTGGTTTAA       6420
```

556

```
TTTGGCCATC TGTTCATTTT TAGAATCATA GTATTGATTC CCAGCGATGA TGCCATTCCA        6480

GTCATCCAAA CGGTCTGTGT ATGCATCCTT AACAGAGGCC AGAATCTTCA AAGGAATCTT        6540

TTTCACTTCC TTGCCATCTT TACTGACAAT GACATTGGTT GTCCCTTCCT TAAGAGGTTC        6600

TAAAATTCCA TTTTTGACTG AAGCAACGTC AGGATTTTCT ACCTTATAAG TATAGTCCGC        6660

AAGAGAAAAA ACATGTTTTT TTCCAATTGG TAAATCAATC TTTTCCTCAA GCTGTTTATC        6720

TGTTTGAGAA TCCTCAGAAA GCTGGTCTGC TACCTCTACC AGCTCAATAT CCTTAAAGGA        6780

AACAGTCCCA GTTCCTGTTT CATAGAATAA CTCCAGCTTG ATTTTATCAA CATCTAAAGT        6840

CGGGCTATAG TCTGCTTCAA TGGTCTGCCA GTCCTTTGTT CCTGACGTCG TTGCAGAATT        6900

CCACAATCGC TTGTCCTTAC CACTTTCCTC AATGATACGA ACTTTGGCAA TCCCGATTTT        6960

ATTATCTGTT TTAATCTTGA AACGCAGTTT ATACTTTTTC TTAGCTTCAA TAGGAACCAT        7020

ACGGTGAAGC GCTGCCCTTA ATTTCTCATG GCTTGAGATA GTGATAGCCC CATCCTTAGC        7080

CTCAATGACT CGAGTTGAGG CATCTGCACT ATTCTTCTGG TCTACCCAAG CTGACCACCC        7140

CCTGAGCTTT GCTTCCTGTC CGG                                               7163
```

(2) INFORMATION FOR SEQ ID NO: 68:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 9244 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

```
CGTTATAACA TACATGTAAG CGGTACCCAA AATGGTGCCA AGTCAAAATT TTTAAGGAGG          60

AAAATACATG TCTTCACATC CAATTCAGGT CTTCTCAGAA ATTGGGAAAC TGAAAAAAGT         120

TATGTTGCAC CGTCCAGGCA AGGAGTTAGA AAACTTGTTG CCGGACTATC TTGAAAGGCT         180

TCTTTTTGAT GATATTCCTT TCTTGGAAGA TGCTCAAAAA GAACATGATG CATTTGCCCA         240

AGCTCTTCGC GATGAAGGAA TTGAGGTTCT CTACCTAGAA CAACTCGCTG CTGAATCATT         300

GACCTCTCCA GAAATCCGCG ATCAATTTAT CGAGGAATAC TTAGACGAAG CCAACATCCG         360

TGATCGTCAA ACCAAGGTTG CTATTCGTGA ATTGCTTCAC GGCATCAAGG ACAACCAAGA         420

ATTGGTTGAA AAAACAATGG CTGGGATTCA AAAAGTTGAA TTGCCAGAAA TTCCTGACGA         480

AGCTAAAGAT CTAACTGACT TAGTTGAATC AGAGTATCCA TTTGCAATTG ACCCGATGCC         540

AAACCTCTAT TTCACTCGCG ACCCATTTGC AACAATTGGA AACGCCGTAT CGCTTAACCA         600

CATGTTTGCA GACACTCGTA ACCGTGAAAC ACTCTACGGT AAGTATATCT TCAAATACCA         660
```

557

```
CCCAATCTAT GGCGGAAAAG TGGATTTGGT CTACAACCGT GAAGAAGATA CGCGTATCGA        720

AGGTGGAGAC GAGTTAGTTC TTTCTAAAGA CGTCCTTGCA GTAGGTATCT CTCAACGTAC        780

AGACGCAGCT TCTATCGAAA AACTTTTGGT CAACATCTTC AAGAAAAATG TTGGCTTCAA        840

GAAAGTTTTG GCCTTTGAAT TTGCTAACAA CCGTAAATTC ATGCACTTGG ATACTGTCTT        900

CACTATGGTA GACTATGACA AGTTCACTAT TCACCCAGAA ATCGAAGGCG ACCTTCACGT        960

TTACTCAGTT ACTTACGAAA ACGAAAAACT TAAAATCGTT GAAGAGAAAG GTGACTTAGC       1020

TGAACTTCTT GCTCAAAACC TTGGTGTAGA AAAAGTTCAT TTGATTCGTT GCGGTGGTGG       1080

CAATATCGTA GCAGCTGCGC GTGAACAATG GAACGACGGT TCTAACACTT TGACCATCGC       1140

ACCTGGTGTG GTAGTTGTTT ATGACCGCAA TACCGTGACC AATAAGATTT TGGAAGAATA       1200

CGGGCTTCGC TTGATTAAGA TTCGCGGAAG TGAATTGGTT CGGGGCCGTG GTGGACCTCG       1260

TTGTATGTCT ATGCCATTTG AACGTGAAGA AGTGTAATCG CTGTTCGATA TTCGTCAATA       1320

GAAAATGTAA AAAATAGAAA GAGGAAATAA TAAAATGACA AATTCAGTAT TCCAAGGACG       1380

CAGCTTCTTA GCAGAAAAAG ACTTTACCCG TGCAGAGTTA GAATACCTTA TTGGTCTTTC       1440

AGCTCACTTG AAAGATTTGA AAAAACGCAA TATTCAACAC CACTACCTTG CTGGCAAGAA       1500

TATCGCTCTC CTATTTGAAA AAACATCTAC TCGTACTCGT GCAGCCTTTA CAACTGCGGC       1560

TATCGACCTT GGTGCTCACC CAGAATACCT CGGAGCAAAT GATATTCAGT TGGGTAAAAA       1620

AGAATCTACT GAAGATACTG CTAAAGTATT GGGACGTATG TTTGACGGGA TTGAATTCCG       1680

CGGATTCAGC CAACGTATGG TTGAAGAATT GGCAGAATTC TCAGGCGTTC CAGTATGGAA       1740

CGGTCTAACT GACGAATGGC ACCCAACTCA AATGCTCGCT GACTACTTGA CTGTTCAAGA       1800

AAACTTCGGT CGCTTGGAAG GCTTGACATT GGTATACTGT GGTGATGGAC GTAACAACGT       1860

TGCCAACAGC TTGCTCGTAA CAGGTGCTAT CCTTGGTGTC AATGTTCACA TCTTCTCACC       1920

AAAAGAACTC TTCCCAGAAA AAGAAATCGT TGAATTGGCA GAAGGATTTG CTAAAGAAAG       1980

TGGCGCACAT GTTCTCATCA CTGAAGATGC TGATGAAGCA GTTAAAGATG CAGACGTTCT       2040

TTACACAGAC GTTTGGGTAT CAATGGGTGA AGAAGACAAA TTCGCAGAAC GTGTAGCTCT       2100

TCTTAAACCT TACCAAGTCA ATATGGACTT AGTTAAAAAA GCAGGCAATG AAAACTTGAT       2160

CTTCCTACAC TGCTTGCCAG CATTCCACGA TACTCACACT GTTTATGGTA AAGACGTTGC       2220

TGAAAAATTT GGTGTAGAAG AAATGGAAGT AACAGACGAA GTCTTCCGCA GCAAGTACGC       2280

TCGCCACTTC GATCAAGCAG AAAACCGTAT GCACACTATC AAAGCTGTTA TGGCTGCTAC       2340

ACTTGGTAAC CTTTATATTC CTAAAGTATA ATTTTAGATA ATAAACCGTC TACCAACAGC       2400
```

558

```
TATGAGGGCT GCGACTAATA GCTTTAGTCC GGTCCTCTTT TATGTAATGG TAATCTATTA      2460

TTTCTTATAA AATATGTGAA AAATCATTAA ATTGAAATCT AAACGCATTC TATTGAGTGT      2520

GATAAAGGAG AATTTATGGC AAATCGTAAA ATTGTAGTAG CTTTGGGAGG AAATGCGATT      2580

CTTTCTTCTG ACCCATCAGC AAAGGCTCAA CAAGAAGCTT TAGTTGAAAC AGCTAAGCAT      2640

CTTGTAAAAT TGATTAAAAA TGGAGATGAT CTGATTATCA CTCACGGTAA TGGACCTCAA      2700

GTTGGGAATC TCTTGCTCCA ACATTTGGCA TCAGACTCTG AAAAGAACCC TGCCTTCCCA      2760

CTCGACTCAC TTGTCGCTAT GACAGAAGGT AGCATCGGTT TCTGGTTGAA AAATGCTTTG      2820

CAAAATGCTC TCTTGGATGA AGGCATCGAA AAAAATGTTG CCTCTGTTGT AACGCAAGTT.     2880

GTCGTAGATA AAAATGATCC AGCTTTTGTT AACTTGAGTA AACCAATCGG TCCTTTCTAT      2940

TCAGAAGAAG AAGCAAAAGC AGAAGCCGAA AAAAGCGGAG CGACTTTCAA GGAAGATGCT      3000

GGCCGTGGCT GGCGTAAGGT CGTTGCCTCA CCAAAACCTG TTGACATCAA AGAAATTGAA      3060

ACCATCCGTA CTCTTTTAAA TAATGGTCAA GTCGTCGTAG CTGCAGGTGG TGGCGGTATT      3120

CCCGTCGTCA AAGAAAACAA TGGACATTTG ACTGGTGTCG AAGCGGTTAT TGATAAAGAC      3180

TTCGCTTCCC AACGTTTGGC AGAATTGGTT GATGCAGACC TCTTCATCGT TTTGACAGGT      3240

GTAGATTATG TATTTGTTAA CTACAACAAG CCAAACCAGG AAAAATTGGA ACATGTGAAT      3300

GTTGCCCAGC TGGAAGAATA TATCAAACAA GATCAGTTTG CACCAGGTAG CATGCTTCCA      3360

AAAGTAGAAG CAGCTATCGC TTTTGTCAAT GGTCGTCCAG AAGGAAAAGC AGTTATTACT      3420

TCCCTTGAAA ATCTAGGCGC CTTGATTGAA TCTGAAAGCG GAACAATTAT TGAAAAAGGA      3480

TAAGTTGTTT TACTAATAAG ATGTATTCTA TTTCTAGTAT CTTTATATCA AATTAGAAAT      3540

TATTCTTGAA AACATGTACA ATATTTCAAA AGATACTAGT TTTAGACTTT AATATGGTAA      3600

AACAAATATA AATAGAAAGC GTTTTCTTGA ATGTTTATTT AAGAAAGTAG TTGGTTTTTT      3660

ACACTTTGTT AGACATCAGG AGGAAAAACA AATGAGTGAA AAAGCTAAAA AAGGGTTTAA      3720

GATGCCTTCA TCTTACACCG TATTATTGAT AATCATTGCT ATTATGGCAG TGCTAACTTG      3780

GTTTATCCCT GCGGGGGCCT TTATAGAAGG TATTTACGAG ACTCAGCCTC AAAATCCACA      3840

AGGGATTTGG GATGTCCTCA TGGCACCGAT TCGGGCTATG CTAGGTACTC ATCCAGAGGA      3900

AGGTTCGCTC ATTAAAGAAA CGAGCGCAGC GATTGATGTA GCCTTCTTCA TCCTTATGGT      3960

TGGTGGTTTC CTTGGCATTG TCAACAAAAC TGGTGCTCTT GACGTAGGGA TTGCCTCTAT      4020

CGTGAAGAAG TATAAGGGCC GCGAAAAAAT GTTAATTTTG GTACTGATGC CTTTGTTTGC      4080

CCTCGGTGGT ACAACTTATG GTATGGGTGA AGAAACAATG GCCTTCTATC CACTCCTTGT      4140

GCCAGTTATG ATGGCCGTTG GTTTTGATAG CCTGACTGGT GTTGCAATTA TTTTGCTCGG      4200
```

559

```
TTCTCAAATC GGCTGTTTGG CATCTACTCT GAATCCATTT GCGACAGGTA TTGCTTCAGC    4260

GACTGCGGGA GTTGGTACAG GGGACGGTAT CGTACTTCGT CTGATCTTCT GGGTTACCTT    4320

GACTGCTCTT AGTACTTGGT TTGTTTACCG TTATGCGGAT AAGATTCAAA AAGATCCGAC    4380

TAAGTCACTG GTTTATAGTA CTCGCAAAGA AGATTTGAAA CACTTTAACG TAGAAGAATC    4440

TTCATCTGTA GAATCTACAC TTAGCAGCAA ACAAAAATCA GTTCTCTTCT TATTTGTGTT    4500

GACATTCATC TTGATGGTAT TGAGCTTCAT TCCATGGACA GACCTTGGCG TTACCATTTT    4560

TGATGACTTT AATACTTGGT TGACTGGTCT TCCAGTTATT GGTAATATTG TCGGTTCATC    4620

TACTTCTGCA CTAGGTACTT GGTACTTCCC AGAAGGCGCA ATGCTCTTTG CCTTTATGGG    4680

TATCCTGATT GGTGTTATTT ATGGTCTTAA AGAAGATAAG ATTATCTCTT CCTTCATGAA    4740

TGGTGCTGCT GACTTGCTCA GTGTTGCCTT GATCGTAGCG ATTGCTCGTG GTATTCAAGT    4800

TATCATGAAC GACGGTATGA TTACCGATAC AATCCTCAAC TGGGGTAAAG AAGGCTTGAG    4860

CGGTCTATCT TCACAAGTCT TTATCGTTGT AACTTATATC TTCTATCTAC CTATGTCATT    4920

CTTGATCCCA TCTTCATCTG GTCTTGCCAG CGCAACTATG GGTATCATGG CTCCACTTGG    4980

AGAATTTGTA AATGTCCGTC CTAGCTTGAT TATCACTGCT TACCAATCTG CTTCAGGTGT    5040

CTTGAACTTG ATTGCACCAA CATCTGGTAT TGTGATGGGA GCTCTTGCAC TTGGACGTAT    5100

CAACATTGGT ACTTGGTGGA AATTCATGGG CAAACTCGTA GTCGCTATTA TTGTAGTGAC    5160

CATCGCCCTT CTTCTCCTTG GAACCTTCCT TCCATTCCTA TAAAATAGTG AGTGAGGTGA    5220

TTCCATGAAA ATAGATATAA CAAATCAAGT TAAAGATGAA TTTCTTATAT CATTAAAAAC    5280

CTTGATTTCC TATCCTTCAG TACTCAATGA AGGAGAAAAT GGAACACCTT TTGGACAAGC    5340

AATCCAAGAT GTCCTAGAAA AAACTTTAGA GATTGTCGA GACATAGGTT TCACTACCTA    5400

TCTTGACCCT AAAGGTTATT ACGGATATGC AGAAATCGGT CAGGGAGCAG AGCTTCTGGC    5460

CATTCTCTGT CATTTGGATG TTGTTCCATC AGGTGATGAA GCAGATTGGC AGACACCGCC    5520

ATTTGAAGCA ACTATCAAAG ACGGCTGGGT ATTCGGACGT GGTGTCCAAG ATGATAAAGG    5580

CCCCTTCGCTC GCAGCTCTCT ATGCAGTAAA AAGCTTGCTG GACCAAGGTA TTCAGTTCAA    5640

AAAGCGCGTA CGCTTTATCT TTGGTACCGA TGAGGAAACC CTCTGGCGCT GCATGGCACG    5700

CTACAATACC ATCGAAGAAC AGGCCAGTAT GGGCTTTGCA CCTGACTCAT CTTTTCCTCT    5760

GACCTATGCT GAAAAAGGGC TTCTACAGGT CAAACTTCAT GGCCCTGGAT CGGATCAACT    5820

AGAGCTTGAA GTAGGAGGCG CCTTTAACGT TGTACCAGAC AAGGCCAACT ACCAAGGTCT    5880

CCTCTATGAA CAGGTTTGTA ACGGTCTCAA AGAAGCTGGT TATGATTACC AAACCACTGA    5940
```

```
                                       560
ACAAACCGTA ACGGTTCTCG GAGTGCCAAA GCATGCTAAG GATGCTAGTC AAGGTATCAA      6000

TGCTGTCATC CGACTAGCTA CCATTCTTGC TCCTCTCCAA GAACACCCTG CTCTCAGTTT      6060

TCTTGCAACA CAAGCAGGTC AAGACGGCAC AGGAAGACAA ATCTTTGGTG ATATAGCAGA      6120

TGAACCTTCT GGTCACCTAT CCTTTAATGT CGCAGGTCTC ATGATCAATC ATGAACGTTC      6180

TGAAATCCGT ATTGACATTC GGACTCCTGT CTTAGCTGAC AAGGAAGAAC TAGTAGAGTT      6240

GCTTACAAGA TGTGCACAAA ACTACCAACT CCGCTACGAA GAGTTTGACT ATCTAGCGCC      6300

TCTATACGTC GCAGAAGACA GTAAACTCGT TAGCACACTG ATGCAAATCT ACCAAGAAAA      6360

GACTGGCGAT AACAGTCCTG CTATTTCATC CGGTGGTGCC ACTTTTGCTC GCACCATGCC      6420

AAATTGTGTA GCCTTCGGCG CCTTATTCCC AGGAGCGAAG CAGACAGAAC ATCAGGCAAA      6480

TGAATGTGCC GTTCTAGAAG ATTTGTACCG TGCTATGGAT ATTTATGCCG AAGCCGTCTA      6540

TCGACTTGCA ACTTAATCAG GCAACTGTTT CTACCAAAAA AAATCGACCG ATTAATGAAC      6600

TGCACCCCAA AAGTTAGACA GAATAAATCT AACTTTTGGG GTGTTTTATT ATGAAATTGA      6660

GTTATGAAGA TAAAGTTCAG ATCTATGAAC TAAGAAAGCA AGGACAAAGC TTCAAACAGC      6720

TTTCAAAAAG ATTTGGTGTG GATGTTTCTG GTCTAAAGTC ATCTGAATCT TTGAGATGAG      6780

CTTTATAAAT CGCTTTTTTC AGTTTTTGCA CTGGTGTTTC GATAAACTCA AACTTTTTAG      6840

CCGTGGTATT GCCTGATTTT ATAGTATATT GAAACTAGAA TAGTACACCT CTCCTTCTAA      6900

AACATTTTTA GAAATCGATT TGACTGTCCT GATCGATTTG TCCTGTTCTT ATTTCATTTT      6960

ACTATATTTG AGCCACTTCG TCTTTAACGG CTTTATTCAT AAGCTCTTGT AATTTTTCTT      7020

TACTATCAAT TACTTCTGAT TTTCCGTTGT AATTTATTGT AATAGGTTTT AACTTACCTA      7080

ATTTCTCGAC ACGCTCATTA ATTTGATCTT TTTTGAAGGC TGCTTATGTT TTTCCTAAGA      7140

TTTTTTCAAA AATATATTTA TCAGATAGCG GTTTGTCTTC TTCTTCAGCT TGGTTTTTGT      7200

ATTAATTTGA AACATAAGGA ACAAATCCTT CATAGTAACC TAATGCTCCC ATAAGTTCAA      7260

AAGCTTGTTT TCTAATTCAA ACCATTGCAA CTCAGATTTC AGCTTTTCAG ATAAATCCTG      7320

CTCATCCAAA TAATGACTTG AAATTAGTGC TGAACTCGTT TCTGTATCCT GTACAGGCTG      7380

AGCACCCATA CCAGCAAAAA ATAAACTCGT TCCTAGCAAG ACCGAACAAG CTCCTATTGC      7440

ATATGGCCTC AAAGAAAAAC GCTGCTTTCT CTCAAATTGA AATTCTTTCA TCCCATCTCC      7500

CATCATTCAT TATTACTGTA TATTTTGTAT ATCAGAAATA GTTTGTATTC ACAAATCTTT      7560

CTAGTTATTC CCTTATCATT CCTAATTAAG GGAGATAACA TACAATAATT TTTAGTTAAA      7620

TGTATATCGA TGTTTTTTGT TTTTCTTAAT AAACGCAATA CAAAAAGAGC CTGTTACCAA      7680

GCTCTTTGTA CTCAATGAAA ATCAAAGAGC AAATTAGGAA ACTAGCCACA GGTTGCTCAA      7740
```

561

```
AACACCGTTT TGAGGTTGCA GATAGAACTG ACGAAgTCAG CTCAAAACAC TGTTTTGAGG      7800

TTGCAGATAG AACTGACGAA GTCAGTAACA TCTATACGGC AAGGCGACGC TGACGTGGTT      7860

TGAAGAGATT TTCGAAGAGT ATTAGTCTAT TATTTCTTCT CAGCGCGAAG GGCTGACAAG      7920

ATTTGTGTTC GGATATCATC CACACCATTT GGAGTATTTG GTAAAAAGAT AGTTTGATTT      7980

CCTTTAGAGG CAAAGGTATT CAAGGTATCC AAATACTGGT TGGTCAAGAG GATAGACATG      8040

ATTTGTTCTT CTGTCATGCC AACATTGGCT TCCTTGAGTT CGGTGATAGA CTCTGCCAAT      8100

CCATCCACAA TCGCCTTACG TTGTTGGGCA ATCCCCACAC CATGAAGGCG GTCTTTTTCT      8160

GCTTCTGCTT CAGCTGCAGT GACAATTTTA ATCTTGTCAG CTTCCGCCAA TTCTTGTGCT      8220

GCGACCCGCT TACGTTGCGC CGCATTGATT TCATTCATGG ATTGCTTAAC TTCTGCATCT      8280

GGTTCGACCT TGGTAATCAA GGTTTTCACG ATAATGTAGC CGTAAGTGGT CATTTCTTCT      8340

GCTACTTGGT GTTGAACTTC AAGGGCAATC TCATCTTTTT TCTCAAACAA TTCATCCAAG      8400

GTTAATTTTG GAACAGAAGA GCGAAGAGCA TCTTCGATAT AAGATTTAAT CTGAGATTCT      8460

GGACGTATGA GTTTATAGTA AGCATCTGTC ACGCTCTGCT CGTTGACACG GTACTGAGTC      8520

GCTACATTCA TCATAACGAA CACATTGTCC TTGGTCTTAG TCTCAACCAC AATATCACTT      8580

TGCAACAAGC GCAACTGAAT CCGTGCTGCA ATCGAGTCAA TCCCAAAAGG CAAGCGAATA      8640

TGAATACCGC TATTAGCAAC CTTTTGGTAT TTCCCAAAGC GTTCAATAAT CGCCACCGAC      8700

TGCTGACGAA CCACATAAAC TGTACTCAGT GTGACTATCA CCAATAGGAG CACACAAACA      8760

ATCAGAAAAA TCATGAAAAA TATTGCCATA ATGGAACCTC CACAAGTATT TTTCTAGTAT      8820

TATAGCACAT TTAAAGAAGG CTGTGCCGTT TTTACTGCGA TTTTTCCTGA AATGTCAATA      8880

ATTAGAGGTG AATTGTCCTA TTGTCGTCCA ATCTCTTGCT AAAATAACTC TTTATAAAAG      8940

GCAATCGTTT CTTCTAAGGT TGGCATAAAT GGATTTCCTG GTGCGCAGGC ATCAATCAAG      9000

GCATTCTTAG AAAGGTATTC AAAGTCGAAA TCTTTTTCTT CAATACCAAG TTCAGTCAGT      9060

TTCTTAGGAA TACCTACTGT CTCAGAAAGC TTCTCAATCT CAGCAATCGC ATAATCGGCA      9120

CATTCTTGAT CTGATTTACC TTCTACATGA AGTCCCAAGG CTTTGGCAAC ATTGCGGAAA      9180

GCTTCTGGTA CACGTTTAGC ATTTTCACGT TCTATAACTG GTAGCAACAT GGCACAGCAC      9240

ACGG                                                                   9244
```

(2) INFORMATION FOR SEQ ID NO: 69:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 8898 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double

562
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

```
GATCTGAACT TTATCATCAT AACTTAATTT CATAATAAAA ACACCCCAAA AGTTAGATTT      60

TTTCTGTCTA ACTTTTGGGG TGTAGTTCAG TCATTGGACT GACGTTTTTT TGTATGCTTA     120

TTTTGATTTG ATGTAGTTGA TACCATCTGC TTTTGGTGCG ACTGCTTTTC CAAAGAAGGC     180

TGCTAAGACA AGAATTGTCA AAACATAAGG TGCAATTTGA AGATAAACCG CTGGCACTCC     240

TTGTAGGAAC GGCAATTGAG AACCGATAAC AGCCAAACTT TGTGAAAGTC CAAAGAAGAG     300

ACTAGAAAGC ATAGCACCGA TTGGATTCCA TTTCCCAAAG ATCATCGCAG CAAGGGCGAT     360

AAATCCAGGT CCAACAATAG TTGTCACTGA GAAGTTAACT GAGATTGATT GCGCATAAAT     420

CGCTCCGCCA ATTCCACCTA GAAAACCTGA AATAATAACC CCTAAATATC TCATCTTGTA     480

GACGTTGATT CCCAAGGTAT CCGCTGCTTG AGGATGTTCA CCGACAGAGC GGAGACGAAG     540

ACCAAATTGA GTCTTAAAGA GAATAAACCA AGCAAGGAAT GAGAAGGCAA TCGCCAGATA     600

ACCAAGTAGA CTAGTTGACT TGAAGAAGAT ATCACCAATC ACTGGGATAT TTGCCAAGAC     660

TGGGAAATCA AAGCGTCCAA AAGTTTGACT TAGGTTGTCG GTTTGTCCTT TGTTATAAAG     720

AACTTTAACT AAGAAAACAG CCAAGGCAGG CGCCATCAAG TTCAATACCG TACCGCTGAC     780

AACATGGTCT GCACGGAAAT GAACCGTCGC TGCTGCGTGG ATGATAGAGA AAACACTACC     840

AACCAATCCT GCTACAAGCA AGGATAGCCA TGGAGTTGCT GCTCCAAATT GTTCTGCAAA     900

TTCAAGGTTA AAGACAACTC CAGAAAAGGC ACCCATAACC ATAATTCCTT CAAGGCCAAC     960

GTTTACCACA CCACCACGTT CAGAGAAAAC ACCACCGATA CTTGTAAAGA TGAGAGGTGC    1020

TGAGTAAATC AGCATAGAAG ACACCAAGAG GGGGAGCAAG GTTATAATAG ACATCTTTAC    1080

TTACCTCCTT TAACTTGTTT TTTCGGTTTG ACAAAGCGTT CGATAAGGTA ATGAACACTG    1140

ACAAAGAAGA TAATAGACGC TGTTACAATG CTGACAAGCT CAGATGGTAC CTGCGCCGCA    1200

TTCATACCAG GAGCCCCAAC TTGGAGAACG CCAAATAGGA AGGCTGCAAA GAGTATACCA    1260

ATTGGTGAGT TGGCCGCAAG CAAACTAACC GCCATTCCGT TAAATCCGAT AGCTAATGAC    1320

GAACCTTGAA CATAGACGTT CTGGAAGGTT CCCAAACCTT CAACAGCTCC ACCAAGACCT    1380

GCCAAGGCAC CTGAAATAAT CATAGATAGG ATAATAGTCC GCTTGGCAGA AATACCAGCA    1440

TATTCTGAAG CATGTGGATT AAGACCAACT GCACGGATTC CAAAACCAAG AGTTGTTTTC    1500

TTGAGCATGA ACCAAATAAC TGCAACGGCA ATGATGGCAA AGAAAATACC AATATTCATC    1560

CGTGAGTTAC CAGTCAACTC AGCCAACCAA GGTGTCTGAT AGGTTGCATT AGCCCCAACA    1620
```

563

```
CGAATGGTCG AATCTGTACT TTGCATGAAG TCTTTAGGGA AAGCATGGAT AAAGGCATTC    1680

CCTACATACA AGACAATGTA GTTCATCATG ATGGTTACAA TAACCTCTGA CGTCCCTAGA    1740

TAGGCCCTAA GAATACCTGG AATCGCTCCG ACAATCCCAC CAGCAATCAA GGCAATCACG    1800

ATGGTTGCTA GAATCATCAA GGGACGGGGC ATATCTGGAT GCGACAGGGC AAACCAACCA    1860

CTGAGAATCC AACCTGCCAA AGCCTGACCA GGAAGTCCGA CGTTAAAGAA ACCAGCTCGA    1920

CTGGCAACGG CAAAACCAAG ACCAATCAAG ACCAGAGGAC CCATAGCACG GAAGATTTCT    1980

CCAATCCCAC GCAGACTGCC AAAGGCTGTA TAGAACAATT CTTCGTAGCC CCAAATAGCA    2040

TCATAACCGA AGATCCACAT GACAATGGCT CCGAGTAAAA TTCCTAGGAA TACAGAAATC    2100

AAGGGAACCG AAATTTGTTG TAATTTTTTA GACATCACTC TTCTCCTTTC CCAAGTTTCC    2160

ACCAGCCATC AAGACACCAA GTTCTTGTTT ATTGGTTGTT TCTGGTGATA CAATACCTTG    2220

AATCTTACCA TCGTGGATAA CGGCAATACG GTCTGAGACG TTTAAAATCT CATCCAATTC    2280

AAAGCTGACA ACAAGGACAG CCTTGCCATT ATCACGCTCT TCAATCAAGC GTTTGTGGAT    2340

ATACTCAATG GCACCGACAT CCAACCCACG AGTTGGCTGG CTAACGATAA GGAGATCAGG    2400

ATCTCGATCA ATTTCACGAG CAATAATTGC TTTTTGTTGA TTTCCTCCTG AGAGTGCAGC    2460

TGCAGGAACT AATTCACTGG CAGCGCGAAC ATCAAACTCT TCCATCAGCT TTTTAGCATA    2520

AGAAGTAATA TTTGAATAAT TCAAAATTCC ATTTTTACTA TGTGGTTCTT TATAGTAGGT    2580

TTGAAGGGCA ATATTTTCAG ATATCATCAT TTCCAAAATC AAGCCATCAC GGTGACGGTC    2640

TTCTGGAACG TGCCCAACAC TTAGTTCTGT AATCTGACGT GGGTGCAAGC CTACAATTGA    2700

ATCTCCTTTT AGCTCAATGC TACCAGATTC AACCTTACGA AGACCTGTAA TGGCTTGAAT    2760

CAGTTCAGAC TGACCATTTC CATCAATCCC CGCAATACCA ACAATCTCTC CAGCACGAAC    2820

ATCCAAGGAC AGATTTTTAA CAGCTGGAAC ACCACGGTTT TCATTGACCA CCAAATCTTT    2880

GATAGACAAA ACCACTTCTT TTGGTTTAGA GGCTTGCTTC TCTGTTTTAA AGGAAACAGA    2940

ACGTCCTACC ATCATTTCCG CCAAATCAGC ATTGGTAGCC CCTGCAATTT CAACGGTTTC    3000

AATTGATTTC CCACGACGGA TAACTGTAAC ACGGTCAGAA ACTGCTCGAA TTTCATCCAA    3060

TTTGTGGGTA ATCAAGATAA TTGATTTTCC TTCTTTGACA AGATTTTTCA TAATAGCCAT    3120

CAACTCATCA ATTTCTGATG GAGTCAAAAC AGCCGTTGGT TCGTCAAAGA TAAGGATATC    3180

AGCCCCCCGA TAAAGTGTTT TTAAAATTTC TACACGTTGT TGGGCTCCAA CTGAGATATC    3240

TGCTACCTTG GCAGAAGGGT CAACAGCTAA GCCATAACGT TCAGAAAGAG CCTTGATTTC    3300

TTTGCTAGCT CCAGCGATAT CTAGCACACC ATTTTTAGTC AATTCACTAC CTAAAATGAT    3360
```

564

```
GTTTTCAGCC ACTGTGAAGG CTTCAACCAA CATAAAGTGC TGGTGAACCA TCCCGATTCC     3420

CAAGCTAGCT GCTTTAGATG GGGAGTCGAG ATTGACAACT TGACCGTTGA CCGCGATTTC     3480

ACCACTAGTT GGTTCAAGAA GGCCTGCTAA CATGTTCATT AGCGTGGACT TACCAGCCCC     3540

ATTTTCTCCT AAAAGTGCAT GAATTTCACC TTTTCGTAGG TGCAAGTTGA TTTTGTCGTT     3600

GGCAACAAAT CCACCAAACA CCTTGGTAAT ATCACGCATC TCAATGACAT TTTCGTGTGC     3660

CATGTGCTCT TCCTTTCAGA GTCTTATTTT ATTTCAATAA AACTTGCTAG TTTGTCTAGT     3720

AGCAAGCTTT ACTTAGACAA AATGACTTTG TCTCAACTCT TAAAAAAGCG GCCCTTGGCC     3780

GCTTCCTAAG AAATGACTTC CATCCATTAT TTTTCAGGAA CTTTTACGCT TCCATCAAGG     3840

ATTTTAGCTT TTGCATCTTC GACAGCTTTT TTACCTTCTT CTGAAAGGTT TGTTACTGCC     3900

AAGTCAACCC CTTTATCCTT CAATGAGTAA ACGATCACTT GACCGCCAGG GAATTCTCCT     3960

CTTTCTGCCT TGTTAGAAAT ATCTTTTACA GTTGTACCAA CTTGTTTCAA AGTAGATACA     4020

AGAACAAAGT TTGATTCTTT GCCATCTTTA GAAGTGTATT TACCTTCTGC TTCTTGGTCA     4080

CGATCAACAC CGATAACCCA AACTTTTTCA TTTTCAGGAC GGCTTTCGTT GAGAGATTTT     4140

GCCTCTGCAA AGACACCTGC ACCTGTACCA CCAGCTACTT GGTAAACAAT ATCTGCACCG     4200

GCTGCGTATT GTGCGGCTGC AATTGTTTTA CCTTTAGCCG CATCACCAAA TGAACCAGCG     4260

TAGTCAACTT GGACTTTGAT AGATGGGTCT ACTGACGCAA CACCAGCCTT GAATCCTGCT     4320

TCAAAACGAG AGATAACTTC AGATTCGATA CCACCTACAA AACCAACTTG TTTTGTCTTA     4380

GTTGTTTTTG CTGCAGCCAC ACCTGCAAGg TAACCTGACT CATTATCAGC GAAAGTTACG     4440

CTCGCAACAT TCTTTTGGTC TTTAATCACA TCATCAATCA AGACATAGTT CAAGTCAGTG     4500

TGTTCTTTTG CTGCATCTTT AACTGCATTA TTAAGGGCAA AACCAACACC GAAGATTAGG     4560

TTGTAACTTC CAGCCGCTTG TTGCAAGTTG TTAGCGTAGT CAGCTTCACT TGTTGATTGG     4620

AAGTAAGTGA AACCGTTATC TTTTGAAAGA TTGTGTTCTT TACCCCAAGC CTGCAAACCT     4680

TCCCAAGCTG ATTGGTTGAA TGATTTGTCA TCAACACCAC CAGTATCAGT GACGATTGCT     4740

GCTTTTGTCT TCACATCAGA AGATGAAGCT GCGTTACGAG AAGAGCGGTT ACCACATGCA     4800

GCAAGTCCAA CTGCTGCCAC TGCAACTAGG CCAAGACCTA GCCATTGTTT CTTGTTCATT     4860

ACTGAACCTC CTAAATAAGA TGTGCAACGA TGTTGCAAGT ATGGATTGGT TGGCCACAAG     4920

GACCGTGCCA CTCAGAGAGC GACTCAGACT AGTTTAAGTC TGTAAAAGAG TATGGAAGTA     4980

ATTCCCCGAC CGTCATCTCG ACCGTCGATT TATCTTTTGC GACTAAGGTC ACTTTTAGAT     5040

CTTGTTCAAA AAATTCAGCC ATCACTTGGC GACAAGCACC ACATGGCGAG ATCGGTTTTT     5100

CAGTTTGACC ATAGACAATC AATTCTGAAA ATTCTCTTTG GCCTTCAGAT ATAGCCTTAA     5160
```

565

```
AAATAGCTGT TCTCTCACCG CAATTGGTCA AAGGATAGCT AGCATTTTCA ATATTCACTC    5220

CCGTGTAAAC ACTTCCGTCT TTAGCTACTA AAACTGCTCC GATAGGAAAG TGAGAATAGG    5280

GGACATAGGC ATGTTTGCTG GTTTCAATTG CCAGTTCAAT CAACTCAGTA GTCGCCATCT    5340

GCCAATTCTC CTTTTAAAAT AGCTACCCCA GCTGACGTTC CGATACGGGT CGCACCTGCT    5400

TCGACAAAGG CAAGAGCATC TGCATAAGAA CGAGCTCCAC CGGCGGCCTT GACACCCATA    5460

TCAGATCCAA CTGTTTCACG CATTAATGTA ACATCTGCTA TCGTAGCACC ACCAGTTGAA    5520

AAGCCAGTAG ATGTTTTGAC AAAGTCAGCC CCAGCTTTTT GGGCCAATTG GCAAACAACA    5580

ACTTTTTCTT GGTCTGTCAG AAGGCAAGCT TCAATAATGA CTTTCACTAA CTTATCACCA    5640

CTTGCTTCCA CTACTGCGCG AATATCTGAC TCAACCAAGG CTAAATTACC TGATTTGAGA    5700

GCTCCAACAT TGATCACCAT ATCAATCTCA TCTGCACCAT TTTGGATAGC TTCTTTTGTC    5760

TCAAATGCTT TCACGGCTGA AGTTGTTGCT CCCAAAGGGA AACCTACTAC TGTGCAAACC    5820

TTAACATCTG TGCCTTCAAG TCCTTTTTTA GCATGTTCAA CCCAGGTCGG ATTAACGCAA    5880

ACACTGGCAA AGTCATACTC TCTAGCCTCA GACAACAAAC TATCAATTTG TTTTTTCTTT    5940

GCATCTTGTT TTAAAAGCGT ATGATCTATA TATTTATTTA ATTTCATTTC GGTTTTCCCT    6000

CCATTTAGGA GATGATTTCT ACAATTTCAC GGATTTTTTT CACTTCATCA CTTATTTTAA    6060

CACATTTTTG GAAATCTGTA ACTAGTTGAG GTGGAATTTT TTCATTTGTG TATACTTTTG    6120

CAACAATTTC ACCCTTTTGA ACGGAGTCTC CAATCTTCTT TTCAAAAACA ATTCCTGTTT    6180

CATAGTCCAA GGCATCAGAC TTAACTGCAC GACCAGCACC CAGCCTCATG GCATAAAGAC    6240

CAAAGTCCAT AGCTGGAAGA GCTGAAATGA CACCCGTTTC CTGAGCAGGG ATTTCCACCA    6300

CATGAGCTAC ATTTACAGGA CGATAGAGGT CTTCCAAGTC TCCACCTTGG GCTTGCACCA    6360

TTTCCTCAAA CTTAGCCAGT GCTTGACCAT TCTCAAGATG TTGGTGAACT TCTTCAACAG    6420

TTTTGTTAAC ATTTGCCAAA CCAAGCATAA TTTGAGCCAA TTCACAAATA AAGTGGGTAA    6480

TATCCTGACG TCCTTGACCT TGCAAAATCT CCAATGCTTC AAGGATTTCC AGACGATTTC    6540

CAATCGCTCG TCCCAAAGGC TGGCTCATAT CCGTAATCAC TGCTACTGTC TTCCGTCCAA    6600

CAACCTTACC AAGATCTACC ATAGTTTGAG CCAACTCACG CGCCTCATCA ACCGTCTTCA    6660

TGAAGGCACC CTCACCGACA GTCACGTCTA GCAAAATAGC ATCCGCCCCT GCCGCAATTT    6720

TCTTGCTCAT CACCGAACTC GCAATCAAAG GAATCGTGTC GACAGTTGCG GTCACATCAC    6780

GAAGGGCATA GAGAAGCTTA TCTGCTTTGA CCAGCTGGTC TGATTGCCCA ATGACAGATA    6840

CTCCAATATC CTGAACCTGA CGAATAAAAT CCTCTTGACT ACGTTCTACT TGATAGCCCT    6900
```

566

```
TAATGGACTC CAATTTATCA ATTGTTCCGC CTGTATGGCC AAGACCACGA CCACTCATTT        6960

TTGCTACAGG CACACCGAAG CTAGCAACAA GAGGAGCTAA AATCAAGGTT ACCTTATCGC        7020

CGACACCACC AGTAGAATGC TTGTCAACTT TCACACCATC AATGGCTGAC AGGTCAAACT        7080

CTTGCCCAGT CTTAACCATA TTCATCGTTA AATCAGAGAT TTCTCGAGTC GTCATTCCTT        7140

TAAAATAAAC AGCCATAGCA AAGGCAGACA TCTGATAATC AGGAACAGTT CCTGATACAT        7200

AGCCTTCTAT CAGCCATTCA ATTTCACTTG AAGTCAGTTC TTGACCGTCT CGTTTTTTTT        7260

GGATTAAATC AACTGCTCTC ATTCTTTCAC ACTTCTAAGG ATATAGTATC CCTTGTCTTT        7320

TTTAAGGATT TCACAATTGC CAAACACATC TTCCATCTTA GACTTGGCAC TTGGAGCTCC        7380

TTGTTTTTTC TGGATGACGA TGGTCAAATC TCCACCAATT TCCAAGAAAT CTTTACTTTT        7440

CTCGATGATT TCATGAACGA CTTGCTTGCC CGCACGGATA GGAGGATTGG AAATGACATG        7500

GTCAAATCGC CCTTGAACTC TTGCATAAAT ATTAGATTGA AATATCGTCG CTTTTGCATT        7560

ATTTTTTTCA GCATTTCTCT GAGCTAAATC CAGGGCACGA GTGTTAATAT CAACCATGGT        7620

CGCCTGAACT CCGTAAACCT TGACCAAGGA CAAACCTAAT GGACCATAAC CACAGCCTAC        7680

ATCTAGGACT GTCTCTCCTT GGTTGACATC CAGACACTTG AGCAAGAGTT GACTTCCAAA        7740

GTCAACCATT TTCTTGCTAA AAACACCCGC ATCTGTCAAA AAAGTCATTT TTTCTCCCAA        7800

CAAGTCCACT CTCAACTCAT GAATGTCGTG AGCAGCGTCA GGATTTTCTG CATAGTACAT        7860

TTTACTCATG ACACTATTTT ACCATAATTT GACTCAAATT GTAAATCGTT TACAAATTGA        7920

TAATAAAACG AAAAAGACCG AAGAAAGCAA GTCACGAAGC CATTTTCTTC AATCTCTTTC        7980

AACACTTATA AATAATAAAC CATTTAGAAC TATAAATATC ACAGTCCAGA TAAAAACAAA        8040

AAGTTTATCA TCTATAATCA GGCAGATTAT TATTTCTATT GCTTAACCTT AAAATACTTT        8100

ATTATCAACA AAAATTCCTAA CAAAATGTTT AGATAAAAGC CCAACTGATA CGTTTATGTC        8160

AGGATTTCCA AACTTGTCCA AAGTCGTATC AAATCTTCTA GTGACATGTG AAGAAATAA        8220

CCCTCTGTCG CAATCCGTAG GACTAAAAAG CAATAACTAC CCGCAGCAAT CCATTTCGTC        8280

CATCGTTTTT TAGTAAGAAA GCAATTAAGA ACGAACAAAT AAAGACAGCT GTTACAATAG        8340

CATGTTCCAT CAAAAAAGTA AAACCGTAAT AGGTTTCCAC AAAGCATCTA CCATTATCTG        8400

CATTGGTTCC TTTTATAAAA GGTAAAGCAA AACTTAAAAT AAAACAGAGT TCCAATATGT        8460

AACGTTTTAA GATTTTCATA GTACACCTCC TATAAGTTGT GAACTAAAAA GCCCCCTTTA        8520

TAAGCTTATA AATCAGTAGA ATCTATCTCC TATTTCATCA ATAAATTGAT CACTTATACT        8580

ATATACCATT GACTTACCAC ATTCAAGAAA CCGCTTTATT TTTTTAGCTT TTTATGGTAT        8640

GATAGACAAA ATATCTAGGG GAAAACAAAT GACCAACGAA TTTTTACATT TTGAAAAAAT        8700
```

567

CAGCCGCCAG ACTTGGCAAT CTTTACATCG AAAGACAACA CCTCCTTTGA CAGAAGAAGA   8760

ATTGGAATCT ATCAAGAGTT TTAATGACCA AATCAGTCTC CAAGACGTTA CAGATATCTA   8820

TCTCCCCTTG GCTCATTTGA TTCAGATTTA CAAGCGAACT AAGGAAGATT TAGCCTTTTC   8880

AAAAGGAATT TTCCTCCA   8898

(2) INFORMATION FOR SEQ ID NO: 70:

       (i) SEQUENCE CHARACTERISTICS:
           (A) LENGTH: 13188 base pairs
           (B) TYPE: nucleic acid
           (C) STRANDEDNESS: double
           (D) TOPOLOGY: linear

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

TATCTTAACG aGGATTGGGT TTATCGTCAG TCTTATTGCC CTAATTGTGG GAACAATCCC   60

TTAAATCATT TTGAAAATAA TCGGCCTGTA GCAGATTTTT ACTGTAATCA TTGTAGTGAG   120

GAGTTTGAAC TAAAGAGCAA AAAAGGAAAT TTTTCATCAA CAATCAATGA TGGTGCTTAT   180

GCAACGATGA TGAAGCGTGT GCAGGCAGAT AATAATCCTA ATTTCTTTTT TTTAACTTAC   240

ACAAAAAATT TTGAGGTAAA TAACTTTCTT GTCCTTCCGA AGCAATTTGT TACACCGAAA   300

TCGATTATTC AAAGAAAACC ACTTGCACCA ACTGCTAGAC GAGCAGGTTG GATTGGTTGT   360

AACATTGATT TATCACAAGT ACCTTCTAAA GGAAGGATAT TTCTTGTGCA AGATGGACAA   420

GTTAGAGATC CAGAAAAAGT TACAAAAGAA TTTAAGCAAG GTTTATTTTT AAGGAAGAGC   480

TCTCTGTCAT CAAGAGGTTG GACAATAGAA ATTCTAAATT GTATAGATAA GATAGAGGGT   540

TCAGAATTTA CCCTTGAAGA TATGTATCGT TTTGAAAGTG ACCTAAAAAA TATCTTTGTT   600

AAGAACAATC ATATCAAAGA AAAGATTAGG CAACAGCTTC AAATATTAAG AGACAAAGAA   660

ATAATAGAAT TTAAAGGTAG AGGAAAGTAT CGGAAATTAT GAAAACGAAA CAACTTGTTG   720

CATCAGAAGA GGTGTATGAT TTCTTAAAAG TCATCTGGCC TGATTATGAA ACTGAAAGCC   780

GTTACGATAA CCTAAGTTTA ATCGTCTGTA CCTTATCAGA TCCCGATTGT GTGAGATGGT   840

TATCTGAAAA TATGAAATTT GGTGACGAAA AACAACTAGC TTTGATGAAG GAAAAATATG   900

GGTGGGAAGT AGGAGATAAA TTGCCAGAGT GGCTACATAG CTCCTATCAT AGATTATTGT   960

TAATAGGTGA ATTATTGGAA AGCAATCTAA AACTGAAAAA GTATACAGTA GAAATTACAG   1020

AAACTTTATC ACGTTTAGTA AGTATAGAGG CTGAAAATCC AGATGAAGCC GAACGACTTG   1080

TAAGAGAAAA GTATAAGAGT TGTGAAATTG TTCTTGATGC AGATGATTTT CAGGACTATG   1140

568

```
ACACTAGCAT ATATGAATAG GTAGATGTTT TTATTTTGTC AACAAAAAAG AGGCTCGCAC        1200

CTCTTTTTCT TATTTCTTTT TATGATTTAA TACGGCATTG AGGACAATAG CGAGTAGGCT        1260

GGCTACGACG ATTCCGTTTG AGAAGAACAT TTGGAAGGCT GTCGGCATGC TGACAAAGAG        1320

ATTACTGTTG TTGAGACCGA CACCTGCAGC GATTGAAACA GCTGCGATAA GGAAGTTGTG        1380

TTCATTGTTA GCAAAGTCAA CACGGGCGAG GATTTGCATC CCTTGAATTG ATACAAAACC        1440

AAACATTACC AGCATGGCAC CACCGAGGAC GGAGCTTGGA ATGATTTGGG CAAGGGCGCC        1500

AAACTTAGGA AGCAGTCCAA GGAGAACCAG GAAACCAGCT GCGTAGTAGA TTGGCAGGCG        1560

TTTTTTGATG CCTGACAATT TAACCAAACC AACGTTTTGT GAAAATCCGG TGTAAGGGAA        1620

GGTGTTAAAG ATTCCTCCGA GAAGTACGGC CAAACCTTCT GCGCGGTATC CGTTGCGAAG        1680

GCGCGTGCTG TCGATTGGAT CCTTTGTGAT ATCAGACAAG GCCAGATAAA CACCAGTTGA        1740

CTCAACCATA GACACCGTTG CGATGATACA CATCATGACA ATAGATGAGA TTTCAAAGGT        1800

TGGCATCCCA AAGTAGAGTG GAGTTGGGAC ATGGACAAGT GGAGCTACCG CAACAGGAGA        1860

GAAGTCCACC AAGCCCATAG TAGCAGCAAT GGCAGTTCCA ACAACCAGAC CAATCAAAAT        1920

AGAGATAGAC TTGATAAATC CTTTGGTAAA GATGTTGATC AAGAGGATAA TCAGAACAGT        1980

AATAGCTGCA AGCAAGAGAC TTTGACCAGT TGGCTCTGGA ACGTTATTTC CCATATTTCC        2040

AATAGCGACA GGGATCAAGG TTAAACCAAT CGTGGTAATA ACAGATCCTG TTACGATAGA        2100

TGGGAAGAGA TTGGCTACTT TTGAGAAGAT GCCTGAAACA AGAACCACGT AAATCCCAGA        2160

TGCGATAAGG GCACCAAACA TAGCGCCACT ACCATGGCTT TGCCCAATCA TAATCAAGGG        2220

AGCGACCGAC TGGAATGCAA CTCCAAGAAC GACTGGGAGT CCAATCCCAA AGTATTTGTT        2280

GAGTTGGAGT TGGAGGAAGG TTGCCACCCC ACACATGAAG ATATCTGTAG AAATCAGGTA        2340

GGTCAACTGC TCAGCTGAAT AGCCAAGGGC TGTCGCAATC ATGATGGGAA CCAGGATAGA        2400

TCCTGAGTAC ATGGCTAGTA AGTGCTGCAA GCCAAGAACG GCTGCTTGCG AGTGTTTTTC        2460

TTGAGTTTGC ATTAGAGATC TGCCTCCTTA AATACGACTT GACCATTTTC AAAACAATCC        2520

AAACGAGCAA GTGATAGGAC AGGGTAGCCT GCTTTTTCAA GCAAATCACG ACCATCTTGG        2580

AAGGATTTCT CAATCACGAT ACCGATAGCT TGGACTGTGG CACCGGCCTG TTCGATGATT        2640

TGAATCAAGC CTTTAGCAGC TTGGCCATTA GCAGGAAAT CGTCGATAAT CAAAACCTTG        2700

TCCTCTGGTG AGAGGAATTT TTCAGCGATA GAAACGGTGC TGGTCACCTG CTTGGTAAAG        2760

GAGTAGACTT GAGCAGTTAA GATGCCTTCG TTCATGGTGA TGTTCTTAGC TTTTTTGGCG        2820

AAAATCATGG GAACGTTTAA GGCTTCAGCT GTAAAAACGG CTGGGGCAAT ACCCGACGCT        2880

TCAATGGTTA CGACCTTGGT AATGCCAGTA GTAGCAAATT TTTCCGCAAA AACCTTACCA        2940
```

569

```
ATCTCTCGCA TCAAGCTAAA GTCAACTTGG TGGGTTAAAA AGGAATCTAC CTTGAGGATG    3000

TTATCACCCA AGATATGCCC ATCCTTGAGG ATGCGCTCTT CTAATAATTT CATAAGACCT    3060

CCTAAAGTCT AAAAGTTAAT TTACTTGTTG TTTAAATATT TCTATAGTGA TCCCTTTTGC    3120

TAATACTATA TATTTGATAA AACTATTACG AGCGAAGCGA GTCTTATCAA ATATTTCCCG    3180

TTGTAGTGGT ATCATAGACA ATAATCTTGT TATTGTCTAT GACGGGATTT TTGAGAGTAA    3240

AATAGTTCGG GGAACTATTT TAGCCTAAGC CTAGAAATGA AAGAGCTAGG GGCTCAAAAA    3300

TTAGGGATGA AATTCCCTGG ATTCCTGAAA TTATTCACAG GATAATTTCA CCTCCCGTCC    3360

GCACTAATTA AGGGAAATAT TAAAAAAAGA CCTACTTAAT CTCTAAGTAA GTCCCCTAAA    3420

TAGACATGGC AAAAACGGCC ATATCTCACT GCTGACTTAC TTATTGTTAG GTGTTCCGGC    3480

ACCTTGTAGA AACGTCGTGC CAATTCACGA CATAAACAAG TAAAACGATA TTCAATTTTA    3540

AATAGGCTTG AGCCAATGTT TTTATTTTAC ACTAAATAAC TTTAGAAATC AACTATTTTG    3600

TTAGTGTTTT GGTTTAAAAA ACGAACAAAA AGAAGAGAGG GTGAACAAAA ACTCCATTGT    3660

AAGCTAACAG TTATACTAAA TGAAAATCAA AGAGCAAACT AGGAAGCTAT CCACAACCTC    3720

AAAACACTGT TTTGAGGTTG TGGATAGAAT TGACAGAGCC AGTATCATAT ACCTACGGTA    3780

AGGCGACGTT GACGTGGCTT GAAGAGATTT TCGAAGAGTA TTAGAAGATT TTTCCATCAT    3840

AAAAGGCATA CTATCAAGCT TTTAGACACC TGACAATATG CCTTTTTCTA ACTTTAAAGA    3900

CTTTTCCCAA TTTTTATTAT TCTACTCGCT AAATCTTAAA AAATAGCCAT CTGGATCCAA    3960

AACTGCAAAT TTATGAGGAT AGATATAGGG ATCACTGACA CGAAACTTTC TTTTGGTCAA    4020

GGGACGATAA ATAGGATAGT TTGCCTTCAT CACTCTTTAA TAGAGTTTTG AAACATCCTT    4080

TATGCCAAAG GAGAGATTGA CTCCACGACC AAAGGGATAG GTCAGTTCAG CTAGTTGATC    4140

CTTTGTTCCC TCCTCTAACA TTAGTTGACA CTCTTCAAGA GAAAGAGAAA GTTTTCTTCT    4200

GGACGTTGGT ATTCAATCCT AAAACCCAGT AAACCACAGT AGAAGGACCG GGACTGTTCG    4260

ATATTCGATA CAAGCAACTC GGGAATGACC GCATTGTAGT CCATATAGAA AATCCTTACA    4320

AGTCAATTTC CAAGACAATC GGTGTATGGT CTTGGCGAGC ACCTGAGTCA ATCATATCAG    4380

ATTTAGTGAC CTTGTCAGCG ATACGGTTAC TTGTGAGCCA GTAGTCGATT CTCCAGCCTG    4440

TATTGTTGAT TTTAGAAGTT TTGCTGCGTT GTGCCCACCA AGTGTAGCGT TCAGGAACAT    4500

CGCCATGAAC ATGGCGGAAG GTGTCTGTAA ATCCAGTTGC CAAAAGGTTG GTAAATCCAG    4560

CACGTTCCTC GTCAGTAAAT CCAGGTGAAC GGCGGTTGCT AGCAGGATTT GCAAGGTCGA    4620

TTTCATTGTG GGCTACGTTG TAGTCACCGG TCGCAAGGAC TGGTTTTTCT TTGTCTAGTT    4680
```

```
                                        570
CAGCCAAATA CTCAGCATAT TTGGCATCCC AGACTTGGCG TTCTTCCAAG CGTTTGAGAC    4740

CGTCACCAGC GTTTGGAGTG TAAACTTGGG TTACGAAAAA TGCATCAAAT TCTAGAGTGA    4800

TGATACGACC TTCCAAGTCC ATGGTAGAAG GGGCACCGAT TTCTGGGAAG CTGATAGTAG    4860

GTGTAAGTTC TTTCTTATAA AGGAACATGG TTCCAGCATA GCCTTTACGG GCAGGCTCTT    4920

GGGAAGAGCG CCACGTGTTT TCGTAGCCTG GGAAGAGTTC TTCTAAAATT TCCACGTGTT    4980

TCTTTGTAGG TCCTTTGGCA GAAAGCTTGG TTTCTTGGAT AGCAATGATA TCAGCATTTT    5040

CAGCGACCAA GGTTTGTAGG ACTTCTTGGG ACAATTTGGC ACGAGCTGAG TCACTAGTTA    5100

GGGCAGCGTT TAGGGAATCA ATATTCCATG AGATAAGTTT CATAAAGTTA CCTTTTTCAT    5160

TCAGATTATA GATTTTATTA TACCAAAAAA AGATCTATTT CCCCAACGTA TGGTTTGAAA    5220

AATTACTCTC TTTCGTTTAT AATTAAGAAT GATTTTATGA AAGGGAGTGA AAATACATGA    5280

AATTCTACTC TTATGACTAT GTACTCAGCC AAATCGGTCA GCAAAATGGT ATCATGGTTG    5340

GCTTTGGGAT TGTTCTATTA GCTGTGACAG TTTTTTTTGC TTTCAAGGCA TACCATAATA    5400

AAAAGGGAAG CGAATTTCGT GAGTTGGTCA TGATTTCAGA TCTGGCCTTA TTTAGCTCTG    5460

CTTTTGGTCA GCATCACGAC TTATCAAAAC AATCAAGTTT CTAACAATAA ATTTCAAACT    5520

TCACTTCATT TCATCGAGGT TGTTTCCAAA GATTTGTGAG TAGACAAGTC AGAAGTCTAT    5580

GTTAATACTT CCACAAACAC AGATGGCGCA CTTATCAAGG TGGGAGATCG CTATTATCGT    5640

GCCCTAAATG GAAGTGAGCC AGACAAGTAC CTGTTAGAGA AAGTCGAATT GTATAAGACA    5700

GACGCAATTG AACTGGTGGA TGTGAACAAA TGACACTTAA TTATATCGAA ATTTTAATCA    5760

AACTGGTCTT GACTCTCAAA TAGCTCAACA ACAATGTTCA CTTTGTGAAA CGTTTGATTG    5820

ATGGTAAGCC AACTCTCCTT ATCAAAAATG GGAATATTGA CCCAGAAGCC TGTCGTTCAG    5880

TTGGTTTGTC TGCATCGGAT GTATCCCTCA AACTTCGTAG CCAAGGGATT TTCCAGATGA    5940

AGCAAGTCAA ACGAGCTGTG CAAGAGCAAA ATGGGCAACT CATCGTTGTG CAAATGGGAG    6000

ATGAAAATCC TAAGTATCCA GTTGTGACTG ACGGTGTGAT TCAAGTAGAT GTCTTGGAAT    6060

CGATTGGTCG TAGCGAAGAG TGGTTGCTTG ATAACCTCAG TAAACAAGGG CATGACAATG    6120

TAGCCAATAT CTTTATTGCT GAATATGACA AGGGTGCTGT TACAGTCGTA ACTTATGAAT    6180

AAGAAAAACC TGGGGTCTTG TACTCTTCGA AAATCTCTTC AAACCGCGTC AACGTCGCCT    6240

TGCCGTATGT AGGTTACTGA CTTCGTCAGT TCTATCTACA ACCTCAAAGC AGTGCTTTGA    6300

GCAGCCTGCG GCTAGTTTCC TAGTTTGCTC TTTGATTTTC ATTGAGTATT GGCCTCAGGT    6360

TTCCATTTGC AATCAGAAAG GGATTTTATG TCCATTATTC AAAAACTTTG GTGGTTTTTC    6420

AAGTTAGAAA AACGCCGTTA TCTAGTCGGA ATTGTGGCCC TGATCTTGGT TTCCGTCCTC    6480
```

571

```
AATCTCATTC CTCCTATGGT TATGGGGCGG GTCATTGATG CCATCACATC GGGGCAATTA     6540

ACCCAGCAGG ACCTCCTTCT TAGCCTATTT TACTTGCTAC TTGCAGCCTT TGGTATGTAC     6600

TATTTGCGCT ATGTGTGGCG TATGTATATC CTTGGGACCT CTTATTGCTT GGGACAGATC     6660

ATGCGGTCTC GCTTGTTTAA GCATTTCACA AAAATGTCGT CAGCCTTTTA TCAAACCTAT     6720

CGGACGGGTG ATCTGATGGC ACACGCAACC AATGATATCA ATGCCTTGAC TCGTTTAGCA     6780

GGTGGCGGTG TCATGTCTGC GGTGGATGCC TCTATCACGG CTCTGGTGAC TTTGTTGACC     6840

ATGCTCTTTA GCATCTCATG GCAGATGACT CTTGTTGCCA TTCTCCCCCT ACCTTTCATG     6900

GCCTATACGA CTAGTCGCCT AGGGAGAAAG ACTCATAAGG CCTTTGGCGA ATCCCAAGCT     6960

GCTTTTTCTG AACTCAATAA CAAGGTACAG GAGTCCGTAT CAGGTATCAA AGTGACCAAG     7020

TCTTTCGGTT ATCAGGCAGA CGAGTTGAAG TCTTTTCAGG CAGTCAATGA ATTAACCTTC     7080

CAAAAGAACC TGCAAACCAT GAAATATGAT AGTCTCTTTG ACCCTATGGT TCTCTTGTTT     7140

GTTGGTTCGT CCTATGTTTT AACGCTTTTG GTTGGCTCCT TGATGGTTCA GGAAGGGCAG     7200

ATTACAGTTG GGAATCTAGT CACCTTTATC AGCTATTTGG ATATGCTGGT CTGGCCTCTT     7260

CTGGCCATCG GTTTCCTCTT TAATACTACT CAGCGAGGGA AGGTTTCTTA CCAGCGGATT     7320

GAAAATCTTT TGTCTCAGGA ATCTCCTGTA CAAGACCCTG AGTTTCCTCT GGATGGTATT     7380

GAAAATGGGC GTTTGGAGTA TGCCATTGAC AGCTTTGCTT TTGAAAATGA GGAAACACTG     7440

ACGGATATTC ACTTTAGTTT GGCAAAAGGG CAAACACTGG GCTTGGTTGG GCAGACAGGC     7500

TCTGGGAAAA CGTCCTTAAT CAAGCTCCTC TTGCGTGAAT ACGATGTGGA TAAGGGTGCC     7560

ATTTATCTAA ACGGTCACGA TATTCGGGAC TATCGTCTGA CAGACCTTCG CAGTCTCATG     7620

GGCTATGTTC CTCAGGACCA GTTTCTTTTT GCCGACTTCAA TCCTAGACAA TATCCGCTTT     7680

GGCAATCCTA ACTTGCCCCT TTCAGCGGTC GAGGAAGCTA CTAAGCTAGC CCGGGTTTAC     7740

CAAGATATTG TAGACATGCC TCAAGGATTT GATACGCTGA TTGGTGAAAA AGGAGTCACT     7800

CTTTCTGGTG GTCAAAAGCA ACGGTTGGCT ATGAGTCGGG CTATGATTTT AGACCCTGAT     7860

ATCTTGATTT TGGATGATTC CTTATCCGCC GTAGATGCCA AGACAGAGTA TGCGATTATC     7920

GACAACCTCA AGGAGATGCG AAAGGACAAG ACAACCATTA TCACTGCCCA TCGCCTCAGT     7980

GCTGTTGTCC ATGCAGATTT TATTTTAGTT CTACAAAATG GTCAAATTAT CGAACGAGGC     8040

ACGCACGAAG ACTTGCTAGC TTTGGATGGC TGGTATGCCC AAACCTACCA GTCTCAGCAG     8100

TTGGAAATGA AAGGAGAAGA AGATGCAGAA TAAACAAGAA CAATGGACTG TATTGAAGCG     8160

CTTGATGTCT TATCTCAAGC CTTATGGACT CCTGACCTTT TTGGCACTCA GTTTTCTCCT     8220
```

572

```
AGCGACGACG GTCATTAAAA GTGTCATACC CCTCGTGGCT TCCCACTTTA TCGACCAGTA    8280

TCTCAGCAAT CTTAACCAAC TAGCCGTTAC CGTTTTGCTG GTCTACTATG GTCTCTACAT    8340

CCTACAAACT GTAGTTCAGT ATGTCGGCAA TCTTCTCTTT GCGCGCGTGT CTTACAGTAT    8400

TGTTAGGGAT ATTCGTCGGG ATGCCTTTGC CAATATGGAG AAACTGGGCA TGTCTTACTT    8460

TGACAAGACG CCAGCAGGTT CTATCGTTTC TCGTTTGACC AACGATACCG AGACGATTAG    8520

TGATATGTTT TCTGGGATTT TATCCAGCTT TATCTCAGCA GTTTTTATCT TTCTGACAAC    8580

CCTTTATACC ATGTTGGTGC TGGATTTTCG TTTGACGGCT TTAGTCTTGC TCTTTCTTCC    8640

TTTGATTTTC CTTTTGGTCA ATCTCTATCG AAAAAAGTCA GTGAAAATCA TCGAGAAAAC    8700

CAGAAGTCTC TTGTCAGATA TCAATAGTAA GCTGGCAGAG AATATCGAGG GAATCAGGAT    8760

TATTCAGGCC TTTAATCAAG AGAAGCGCCT GCAGGCAGAA TTTGATGAAA TCAACCAAGA    8820

ACACTTGGTC TACGCCAACC GTTCTGTAGC CTTGGATGCC CTCTTTTTGA GACCTGCCAT    8880

GAGTTTGCTG AAACTTCTAG GCTATGCAGT CTTGATGGCC TACTTTGGCT ACCGTGGTTT    8940

TTCTATCGGG ATAACGGTCG GGACCATGTA TGCCTTTATC CAGTACATCA ACCGCCTTTT    9000

TGACCCCTTG ATTGAGGTGA CGCAAAACTT TTCAACTCTG CAAACGGCTA TGGTTTCTGC    9060

AGGTCGTGTC TTTGCCCTGA TAGACGAGAG GACCTATGAA CCTCTTCAAG AAAATGGGCA    9120

AGCCAAAGTC CAAGAAGGCA ATATCCGTTT TGAACATGTG TGTTTCTCAT ATGACGGTAA    9180

ACATCCGATT CTGGATGACA TTTCTTTCTC TGTTAATAAG GGTGAAACCA TTGCCTTTCT    9240

AGGTCATACA GGTTCAGGGA AATCGTCTAT TATCAATGTC CTCATGCGCT TTTATGAATT    9300

CCAGTCAGGG AGAGTTCTCT TGGATGATGT GGATATCAGG GATTTCAGTC AAGAAGAGCT    9360

GAGAAAAAAC ATCGGTTTGG TCTTGCAGGA ACCCTTCCTC TATCATGGAA CTATTAAGTC    9420

CAATATCGCC ATGTACCAAG AAACCAGTGA TGAGCAGGTT CAGGCTGCGG CAGCCTTTGT    9480

GGATGCAGAT TCCTTTATTC AAGAACTTCC TCAGGGGTAC GACTCCCCTG TTTCCGAGCG    9540

TGGTTCGAGC TTCTCTACTG GGCAACGCCA GCTTCTTGCC TTTGCTAGAA CAGTCGCCAG    9600

CCAGCCTAAA ATCCTGATTT TGGATGAAGC GACAGCCAAT ATTGACTCTG AAACAGAAAG    9660

CTTGGTTCAA GCTTCTCTGG CGAAGATGAG ACAGGGCCGA ACAACTATTG CTATCGCTCA    9720

CCGCCTTTCT ACTATTCAAG ATGCCAACTG CATCTATGTC TTGGATAAGG GACGCATTAT    9780

CGAGAGTGGA ACCCATGAGG AACTCTTGGC TCTGGGAGGA ACCTATCACA AGATGTATAG    9840

TTTGCAGGCA GGGGCCATGG CCGATACTCT TTGAAAATCT CTTTAAACCA TGTCAGCTTT    9900

ATCTGCAATC TCAAAGCTGT ACTTTGATTT TCATTGAGTA CTAGAAGGAA ATCCTTCAAA    9960

TTACAGATTT CTTTCACCGC CTTTTCCATT TTGTGGTATA ATGAAAAATG TTGACAAATA   10020
```

573

```
GTATAATAAA AACAAAGGAG AACAGCATGC TGAAATGGGA AGACTTGCCT GTGGAAATGA      10080

AATCAAGCGA GGTTGAGTCT TACTACCAGC TTGTCTCTAA AAGGAAGGGT TCGCTGATTT      10140

TCAAGCGTTG CTTGGACTGG GTTTTGGCCT TGGTCTTACT GGTTCTGACC TCTCCCATCT      10200

TTCTCATCTT GAGCATTTGG ATCAAGTTGG ATAGCAAAGG GCCAGTGATT TACAAGCAAG      10260

AGCGTGTGAC CCAGTACAAC CGTCGGTTCA AGATTTGGAA GTTTCGTACC ATGGTGACGG      10320

ATGCGGATAA AAAAGGAAGT CTGGTGACTT CTGCTAACGA TAGCCGCATT ACCAAGGTTG      10380

GAAATTTCAT CCGACGTGTC CGTTTGGACG AACTGCCTCA GTTGGTCAAT GTCCTTAAAG      10440

GTGAGATGTC CTTTGTCGGT ACACGACCTG AAGTGCCACG TTATACAGAG CAGTATAGCC      10500

CTGAAATGAT GGCAACCTTG CTCTTGCAAG CAGGGATTAC CTCTCCAGCC AGCATCAACT      10560

ACAAGGATGA GGACACAATT ATCAGTCAAA TGACGGAGAA AGGTCTGTCA GTTGATCAGG      10620

CCTATGTGGA GCATGTTCTT CCTGAAAAGA TGCGCTATAA CCTCGCCTAT CTCCGAGAGT      10680

TTAGTTTCTT TGGGGACATC AAAATCATGT TTCAAACCGT GTTTGAGGTA CTAAAATAAA      10740

GTAGTCATAA GAAAATGAGT ACAGATAAAA GGAGCAAATC AATGCCAAAT TACAATATTC      10800

CATTTTCACC GCCTGATATC ACAGAAGCAG AAATTACTGA AGTAGTGGAT ACCCTGCGTT      10860

CTGGTTGGAT CACAACAGGT CCTAAAACAA AAGAACTGGA GCGCCGCTTG TCTCTTTACA      10920

CACAGACACC TAAGACTGTT TGTCTCAACT CTGCGACAGC CGCTCTGGAG TTGATTTTAC      10980

GCGTTTTGGA AGTGGGACCT GGTGATGAAG TCATCGTTCC AGCCATGACC TATACGGCTT      11040

CATGTAGTGT CATTACGCAC GTGGGAGCAA CCCCTGTCAT GGTGGATATC CAAGCAGATA      11100

CGTTTGAGAT GGACTATGAC CTGCTTGAGC AAGCTATCAC TGAGAAAACT AAGGTGATTA      11160

TTCCAGTAGA GCTCGCAGGG ATTGTTTGCG ATTATGACCG TTTGTTCCAA GTCGTGGAGA      11220

AAAAACGTGA CTTCTTTACC GCTTCAAGCA AGTGGCAAAA GGCCTTTAAC CGTATTGTCA      11280

TTGTCTCTGA TAGTGCCCAC GCTTTGGGAT CTATTTATAA AGGACAACCT TCTGGTTCTA      11340

TCGCTGACTT TACTTCCTTC TCATTCCATG CAGTTAAGAA CTTTACAACG GCAGAAGGTG      11400

GAAGTGCGAC TTGGAAAGCC AATCCAGTGA TTGATGACGA AGAGATGTAC AAGGAATTCC      11460

AAATCCTTTC CCTTCACGGG CAAACTAAGG ATGCTCTTGC CAAGATGCAA CTGGGGTCAT      11520

GGGAATACGA TATCGTTACA CCAGCCTATA AGTGCAACAT GACCGATATC ATGGCTTCAC      11580

TTGGTTTGGT ACAATTGGAC CGCTATCCAA GTTTGTTGCA ACGCCGTAAG GACATTGTGG      11640

ACCGCTATGA TAGTGGTTTT GCAGGTTCTC GCATCCATCC TTTGGCACAC AAGACTGAAA      11700

CTGTCGAATC TTCACGCCAC CTCTACATCA CCCGTGTAGA AGGAGCAAGC CTAGAAGAAC      11760
```

574
```
GCAACCTCAT CATCCAAGAA TTGGCTAAAG CAGGAATTGC AAGTAATGTT CACTACAAAC    11820

CGCTTCCTCT CTTGACAGCC TATAAGAATC TTGGATTTGA TATGACGAAC TATCCTAAGG    11880

CCTATGCCTT CTTTGAGAAT GAAATTACCC TCCCTCTTCA TACTAAATTA AGCGATGAAG    11940

AAGTAGACTA TATCATTGAG ACTTTCAAAA CAGTTTCTGA AAAAGTGCTA ACTTTATCAA    12000

AAAAATGACA AACTACAGTC AAGCGAAAGT GATCCTGCCC CTAAAAAGTC TAATTGAGTG    12060

TAAAAACTGT TGTTTTCAAT TGATAATAGT TTACACCTGT AGTTGAGGCC CCTTTCTCCT    12120

CAGAGAGAGA ATTTTTATAG GATTTTCCTT TCTTGTGGGA GTCCCGTGGT TTGAAATAAG    12180

ATGTGAGCAA TTTAGTGTAG CATTTAGAAT CCTTACTAGA CATCATTTAG AAAATCTAGT    12240

GTCTTGTTCT AGTTTTCAAT TCACCCTATT TTTTGAAAGA CGTGAGTTTC CATGAGTGAG    12300

ATTGTGGAAA CTCGCGTCTT TTTTTGTTTT CAGAATATTG TTCAAAATTT TGTGCCTGTC    12360

TTTCATGTTC TAGTCATTCT TTTGCATGAT AGAATTTATA GCATGTTGAT ATTATAATAA    12420

TACAAATATT CTATATGTTT AGTGATGCTT GCTATACATT ATTAGATCTC CTGCGAGACA    12480

ATCTATAAAA CACTTGTCTA CGATTACCTA TATGCCCTAT TCCAGTATTT TAGAAGCACT    12540

GCATCTATTT TTATCGAGGT TAAATCTAGC TTTTATAGAA GGTCTATTTA AGAAATATAT    12600

TGTAGTGTTT TAGTTTCAAT CCGCCATATG AGCGATATTC AGGTAAATAT CCCTGGCGAA    12660

TGCTTGTATG ACAAGGTATT TGTTCTTTCA TTTATAATTT ACAACATATC AACAAATTTA    12720

AATATAGTAA ATGGGATATT TTATATTCAA GCTAAGAAAG ATAGCATCAC TTTTGAATGG    12780

AAGGCTAAAG AGCAAACTAG GAAGTTGGCC ATAGATAGCT CAAAACCCTG CTTTGAGGTT    12840

GTAGATATAG TAAAATGAAA TGAGAATAGG ACAAATTGAT CGGGACAGTC AAATCGATTT    12900

CTAACAATGT TTTAGAAGTA GAGGTGTACT ATTTTAGTTT CAGTCTACTA TAGAACTGAC    12960

CAAGTCAGTA ACCTAGACTT AGGGCAAGGC GGCACTGACC TAGTTTGAAG AGATTTCCGA    13020

AGAGTATAAA TTTTAATATT TTCTTGTGTT ATTCCTTGAC AATTCAATTT GGAAAATATA    13080

TGATAAAGAT AATGACAGCG GTGTCATTCT ATCTATTTTA AGAAAAGTAA TAATCAATTG    13140

TTAAAAATAG TAAAAAAATT GGAGGTTCTG ATGAAATATT TTGTTCCG               13188
```

(2) INFORMATION FOR SEQ ID NO: 71:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 32768 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

575

```
AACGAGTGCA TCAGTCTCAG CAAGCACCAG TGCGTCGGCC TCAGCAAGCA CCAGCGCGTC        60

TGAATCCGCA TCAACCAGTG CCTCAGCTTC AGCAAGTACC TCAGCATCTG AATCAGCATC       120

AACAAGTGCA TCGGCTTCAG CAAGCACAAG TGCTTCAGCC TCAGCAAGTA TCTCAGCGTC       180

TGAATCGGCA TCAACGAGTG CGTCCGCTTC AGCAAGTACT AGCGCCTCAG CATCAGCGTC       240

AACAAGTGCT TCGGCTTCAG CGTCAACGAG TGCGTCTGAG TCAGCATCAA CGAGTACGTC       300

AGCCTCAGCA AGCACATCAG CTTCTGAATC TGCATCAACC AGTGCGTCAG CCTCAGCATC       360

GACAAGCGCC TCAGCTTCAG CAAGTACCAG TGCGTCAGCC TCAGCAAGTA CCAGTGCTTC       420

AGCCTCAGCG TCGACAAGTG CGTCGGCCTC AACCAGTGCA TCTGAATCGG CATCAACCAG       480

TGCGTCAGCC TCAGCAAGTA CTAGCGCCTC AGCCTCAGCA TCAACGAGTG CGTCCGCTTC       540

AGCAAGTACT AGTGCATCAG CATCAGCATC AACGAGTGCA TCGGCTTCAG CAAGTACCAG       600

CGCCTCAGCT TCAGCAAGCA CCAGTGCGTC AGCCTCAGCA AGTACCAGCG CCTCAGCCTC       660

AGCAAGCACC AGTGCCTCAG CTTCAGCAAG TACCAGTGCG TCAGCCTCAG CGTCGACAAG       720

TGCGTCGGCT TCAGCAAGTA CCTCAGCGTC TGAATCAGCA TCAACGAGTG CATCAGCTTC       780

AGCATCAACA AGTGCTTCAG CTTCAGCAAG TATCTCAGCG TCTGAATCGG CATCAACGAG       840

TGCGTCCGCT TCAGCAAGTA CTAGCGCCTC AGCATCAGCG TCAACAAGTG CTTCGGCTTC       900

AGCGTCAACG AGTGCGTCTG AGTCAGCATC AACGAGTACG TCAGCCTCAG CAAGCACATC       960

AGCTTCTGAA TCTGCATCAA CCAGTGCGTC AGCCTCAGCA TCGACAAGCG CCTCAGCTTC      1020

AGCAAGTACC AGTGCGTCAG CCTCAGCAAG TACCAGTGCT TCAGCCTCAG CGTCGACAAG      1080

TGCGTCGGCC TCAACCAGTG CATCTGAATC GGCATCAACC AGTGCGTCAg CCTCAGCAAG      1140

TACTAGCGCC TCAGCCTCAG CATCAACGAG TGCGTCCGCT TCAGCAAGTA CTAGTGCATC      1200

AGCATCAGCA TCAACGAGTG CATCGGCTTC AGCAAGTACC AGCGCCTCAG CTTCAGCAAG      1260

CACCAGTGCG TCAGnCTCAG CAAGTACCAG CGCCTCAGCC TCAGCAAGCA CCAGTGCCTC      1320

AGCTTCAGCA AGTACCAGTG CGTCAgCCTC AGCGTCGACA AGTGCGTCGG CTTCAGCAAG      1380

TACCTCAGCG TCTGAATCAG CATCAACGAG TGCATCAGCT TCAGCATCAA CAAGTGCTTC      1440

AGCTTCAGCA AGTACCAGTG CGTCGGCTTC AGCATCAACG AGTGCTTCAG TCTCAGCGTC      1500

AACCAGTGCC TCTGAATCAG CATCAACAAG TGCCTCGGCT TCAGCAAGCA CCAGTGCGTC      1560

GGCTTCAGCA AGTACTAGTG CATCGGCTTC AGCATCGACA AGTGCGTCTG AATCGGCATC      1620

AACGAGTGCT TCGGCTTCAG CATCAACGAG TGCGTCAGCC TCAGCAAGCA CATCAGCTTC      1680

TGAATCTGCA TCAACCAGTG CGTCCGCTTC AGCGTCAACC AGTGCGTCGG CTTCAGCGTC      1740
```

576

```
GACAAGTGCT TCGGCTTCAG CATCAACGAG TGCGTCGGCC TCAGCAAGCG CAAGTACCTC      1800

AGCGTCAGct TCCGCCTCAA CCAGTGCGTC GGCTTCAGCA AGCACAAGTG CGTCAGCCTC      1860

AGCAAGTATC TCAGCGTCTG AATCGGCATC AACGAGTGCG TCTGAGTCAG CATCAACGAG      1920

TACGTCAGCC TCAGCAAGCA CATCAGCTTC TGAATCTGCA TCAACCAGTG CGTCAGCCTC      1980

AGCATCGACA AGCGCCTCAG CTTCAGCAAG TACCAGTGCT TCAGCCTCAG CGTCGACAAG      2040

TGCGTCGGCC TCAACCAGTG CATCTGAATC GGCATCAACC AGTGCGTCAG CCTCAGCAAG      2100

TACTAGTGCA TCAGCTTCAG CATCAACGAG TGCATCGGCT TCAGCATCAA CCAGTGCCTC      2160

GGCTTCAGCG TCAACCAGTG CGTCAGCTTC AGCAAGTACC AGTGCTTCAG TCTCAGCATC      2220

AACAAGTGCT TCAGCCTCAG CATCGACAAG TGCCTCGGCT TCAGCAAGCA CATCAGCATC      2280

TGAATCAGCG TCAACCAGTG CTTCGGCTTC AGCAAGTACC AGTGCTTCAG CTTCAGCATC      2340

AACCAGCGCC TCGGCCTCAG CAAGCACCTC AGCTTCTGAA TCGGCCTCAA CCAGCGCCTC      2400

GGCCTCAGCA AGCACCTCAG CTTCTGAATC GGCCTCAACC AGCGCCTCAG CCTCAGCATC      2460

AACGAGTGCT TCGGCTTCAG CAAGCACAAG CGCCTCGGGT TCAGCATCAA CGAGTACGTC      2520

AGCTTCAGCG TCAACCAGTG CTTCAGCCTC AGCATCAACA AGTGCGTCAG CCTCAGCAAG      2580

TATCTCAGCG TCTGAATCGG CATCAACGAG TGCGTCTGAG TCAGCATCAA CGAGTACGTC      2640

AGCCTCAGCA AGCACCTCAG CTTCTGAATC GGCCTCAACC AGTGCGTCAG CCTCAGCATC      2700

GACAAGCGCC TCAGCTTCAG CAAGTACCAG TGCTTCAGCC TCAGCGTCCA CAAGTGCGTC      2760

GGCCTCAACC AGTGCATCTG AATCGGCATC AACCAGTGCG TCAGCCTCAG CAAGTACTAG      2820

TGCATCGGCT TCAGCATCAA CCAGTGCCTC GGCTTCAGCG TCAACCAGTG CGTCAGCTTC      2880

AGCAAGTACC AGTGCTTCAG TCTCAGCATC AACAAGTGCT TCAGCCTCAG CATCGACAAG      2940

TGCCTCGGCT TCAGCAAGCA CATCAGCATC TGAATCAGCG TCGACAAGCG CCTCAGCTTC      3000

AGCAAGTACC AGTGCGTCAG CCTCAGCGTC GACAAGTGCG TCAGCCTCAG CAAGTACTAG      3060

TGCATCAGCT TCAGCATCAA CGAGTGCATC GGCTTCGGCG TCAACCAGTG CATCAGAGTC      3120

AGCAAGTACC AGTGCGTCAg CTTCCGCATC AACAAGTGCC TCGGCTTCAG CAAGCACCAG      3180

TGCGTCGGCT TCAGCAAGTA CTAGCGCCTC AGCCTCAGCC TCAACCAGTG CGTCAGCCTC      3240

AGCAAGTATC TCAGCGTCTG AATCGGCATC AACGAGTGCG TCCGCTTCAG CAAGTACTAG      3300

CGCCTCAGCC TCAGCGTCAA CAAGTGCATC GGCTTCAGCG TCAACGAGTG CGTCTGAATC      3360

GGCATCAACG AGTGCGTCCG CTTCAGCAAG TACTAGCGCC TCAGCCTCAG CGTCAACAAG      3420

TGCATCGGCT TCAGCATCAA CGAGTGCGTC CGCTTCAGCA AGTACTAGCG CCTCAGCCTC      3480

AGCGTCAACA AGTGCATCGG CTTCAGCGTC AACGAGTGCG TCTGAGTCAG CATCAACGAG      3540
```

577

```
TGCGTCAGCC TCAGCAAGCA CATCAGCTTC TGAATCTGCA TCAACCAGTG CGTCAGCCTC     3600

AGCATCGACA AGCGCCTCAG CTTCAGCAAG TACCAGTGCG TCAGCCTCAG CGTCGACAAG     3660

TGCGTCGGCT TCAGCAAGTA CCAGTGCGTC AGCCTCAGCA AGTACCAGTG CGTCAGCCTC     3720

AGCGTCGACA AGTGCGTCGG CCTCAACCAG TGCATCTGAA TCGGCATCAA CCAGTGCGTC     3780

AGCCTCAGCA AGTACTAGTG CATCAGCTTC AGCATCAACG AGTGCATCGG CTTCAGCATC     3840

AACCAGTGCA TCAGAGTCAG CAAGTACCAG TGCGTCAGCT TCCGCATCAA CAAGTGCCTC     3900

GGCTTCAGCA AGTACTAGCG CCTCAGCCTC AGCGTCAACA AGTGCTTCAG CTTCCGCGTC     3960

AACCAGCGCC TCGGCCTCAG CAAGTATCTC AGCGTCTGAA TCGGCATCAA CAAGTGCCTC     4020

GGCTTCAGCA TCAACGAGTG CATCAGTCTC AGCAAGCACC AGTGCGTCGG CCTCAGCAAG     4080

CACCAGCGCG TCTGAATCCG CATCAACCAG TGCCTCAGCT TCAGCAAGTA CCTCAGCATC     4140

TGAATCAGCA TCAACAAGTG CCTCGGCTTC AGCAAGCACA AGTGCTTCAG CCTCAGCAAG     4200

TATCTCAGCG TCTGAATCGG CATCAACGAG TGCGTCCGCT TCAGCAAGTA CTAGCGCCTC     4260

AGCATCAGCG TCAACAAGTG CTTCGGCTTC AGCGTCAACG AGTGCGTCTG AGTCAGCATC     4320

AACGAGTACG TCAGCCTCAG CAAGCACATC AGCTTCTGAA TCTGCATCAA CCAGTGCGTC     4380

AGCCTCAGCA TCGACAAGCC CCTCAGCTTC AGCAAGTACC AGTGCGTCAG CCTCAGCAAG     4440

TACCAGTGCT TCAGCCTCAG CGTCGACAAG TGCGTCGGCC TCAACCAGTG CATCTGAATC     4500

GGCATCAACC AGTGCGTCAG CCTCAGCAAG TACTAGCGCC TCAGCCTCAG CATCAACGAG     4560

TGCGTCCGCT TCAGCAAGTA CTAGTGCATC AGCTTCAGCA AGTACTAGCG CCTCAGCCTC     4620

AGCGTCGACA AGCGCCTCAG CTTCAGCAAG TACCAGTGCG TCAGCCTCAG CGTCGACAAG     4680

TGCGTCGGCT TCAGCAAGTA CCTCAGCGTC TGAATCAGCA TCAACAAGTG CGTCGGCTTC     4740

AGCATCAACG AGTGCATCAG CTTCAGCATC AACAAGTGCT TCAGCTTCAG CAAGTACCAG     4800

TGCGTCGGCT TCAGCATCAA CGAGTGCTTC AGTCTCAGCG TCAACCAGTG CCTCTGAATC     4860

CGCATCAACA AGTGCCTCGG CTTCAGCAAG CACCAGTGCT TCGGCTTCAG CGTCAACGAG     4920

TGCGTCTGAG TCAGCATCAA CGAGTGCGTC AGCCTCAGCA AGCACATCAG CTTCTGAATC     4980

TGCATCAACC AGTGCGTCAG CTTCCGCATC AACAAGCGCC TCGGCCTCAG CAAGTACAAG     5040

TGCTTCAGCC TCAGCATCAA CCAGTGCATC AGCTTCAGCC TCAACAAGTG CTTCAGCCTC     5100

AGCGTCAACC AGTGCCTCGG CTTCAGCAAG TACCAGTGCG TCAGCTTCAG CAAGCACAAG     5160

TGCGTCAGCT TCAGCATCAA CCAGTGCTTC GGCTTCGGCA TCAACAAGTG CCTCAGCATC     5220

AGCATCAACG AGTGCGTCAG CCTCAGCAAG TACTAGTGCA TCAGCATCAG CATCAACCAG     5280
```

578

```
TGCATCAGCC TCAGCAAGTA TCTCAGCGTC TGAATCGGCA TCAACGAGTG CATCAGCATC      5340

AGCATCAACG AGTGCATCGG CTTCAGCGTC AACCAGTGCA TCAGTCTCAG CAAGCACCAG      5400

TGCGTCGGCT TCAGCATCAA CGAGTGCCTC AGCCTCAGCA AGTATCTCAG CGTCTGAATC      5460

GGCATCAACG AGTGCGTCAG CCTCAGCAAG TACTAGTGCA TCGGCTTCAG CAAGCACCAG      5520

TGCGTCGGCT TCAGCATCAA CCAGTGCCTC AGCCTCAGCA AGTATCTCAG CGTCTGAATC      5580

GGCATCAACG AGTGCGTCAG CCTCAGCAAG TACTAGTGCA TCAGCmTCAG CATCAACGAG      5640

TGCATCGGCT TCAGCAAGTA CCAGCGCCTC AGCTTCAGCA AGCACCAGTG CGTCAGCCTC      5700

AGCAAGTACC AGCGCCTCAG CCTCAGCAAG CACCAGTGCC TCAGCTTCAG CAAGTACCAG      5760

TGCGTCAGcT CAGCATCAAC AAGTGCTTCA GCTTCGGCCT CAACAAGTGC GTCAGCTTCA      5820

GCATCAACGA GTGCGTCGGC TTCAGCAAGC ACCAGTGCCT CGGCCTCAGC AAGCACCAGT      5880

GCTTCAGCTT CAGCATCAAC AAGTGCGTCA GCTTCAGCAA GTACATCAGT TTCAAATTCA      5940

GCAAACCATT CGAACTCACA AGTTGGAAAT ACTTCTGGAT CGACAGGTAA ATCCCAAAAA      6000

GAATTGCCTA ATACAGGTAC TGAGTCGTCA ATTGGATCTG TGTTACTTGG AGTTCTAGCA      6060

GCTGTTACAG GTATTGGATT GGTTGCGAAA CGCCGTAAAC GTGATGAAGA AGAGTAAGAC      6120

AACCTGTAAA GTTAGGCTAA ACTAACTCGC GCACATAAAT CAAGGAGAAA ATTGCTAGTG      6180

GATGATAAAA TAACAGTCAT TGTACCAGTA TACAATGTGG AAAACTATCT GAGGAAGTGC      6240

CTAGATAGTA TTATTACTCA AACATATAAA AATATTGAGA TTGTTGTCGT TAATGATGGT      6300

TCTACGGATG CTTCAGGTGA AATTTGTAAA GAATTTTCAG AAATGGATCA CCGAATTCTC      6360

TATATAGAAC AAGAAAATGC TGGTCTTTCT GCCGCACGAA ACACCGGTCT GAATAATATG      6420

TCCGGAAATT ATGTGACCTT TGTGGACTCG GATGATTGGA TTGAGCAAGA TTATGTAGAA      6480

ACTCTATATA AAAAAATAGT AGAGTATCAG GCTGATATTG CAGTTGGTAA TTATTATTCT      6540

TTCAACGAAA GTGAAGGAAT GTTCTACTTT CATATATTGG GAGACTCCTA TTATGAGAAA      6600

GTATATGATA ATGTTTCTAT CTTTGAGAAC TTGTATGAAA CTCAAGAAAT GAAGAGTTTT      6660

GCTTTGATAT CTGCTTGGGG TAAACTCTAT AAGGCAAGAT TGTTTGAGCA GTTGCGCTTT      6720

GACATAGGTA AATTAGGAGA AGATGGTTAC CTCAATCAAA AGGTATATTT ATTATCAGAA      6780

AAGGTAATTT ATTTAAATAA AAGTCTTTAT GCTTATCGGA TTAGAAAAGG TAGTTTATCA      6840

AGAGTTTGGA CAGAAAAGTG GATGCACGCT TTAGTTGATG CTATGTCTGA ACGTATTACG      6900

CTACTAGCTA ATATGGGTTA TCCTCTAGAG AAACACTTGG CAGTTTATCG TCAGATGTTG      6960

GAAGTCAGTC TCGCCAACGG TCAAGCTAGT GGTTTATCTG ACACAGCAAC GTATAAAGAG      7020

TTTGAAATGA AACAAAGGCT TTTAAATCAG CTATCGAGAC AAGAGGAAAG TGAAAAGAAA      7080
```

579

```
GCCATTGTCC TCGCAGCAAA CTATGGCTAT GTAGACCAAG TTTTAACGAC AATCAAGTCT      7140

ATTTGTTATC ATAATCGTTC GATTCGTTTT TATCTGATTC ATAGCGATTT TCCAAATGAA      7200

TGGATTAAGC AATTAAATAA GCGCTTAGAG AAGTTTGACT CAGAAATTAT TAATTGTCGG      7260

GTAACTTCTG AGCAAATTTC ATGTTATAAA TCGGATATTA GTTACACAGT CTTTTTACGC      7320

TATTTCATAG CTGATTTCGT GCAAGAAGAC AAGGCCCTCT ACTTGGACTG TGATCTAGTT      7380

GTAACGAAAA ATCTGGATGA CTTGTTTGCT ACAGACTTAC AAGATTATCC TTTGGCTGCT      7440

GTTAGAGATT TTGGGGGCAG AGCTTATTTT GGTCAAGAAA TCTTTAATGC CGGTGTTCTC      7500

TTGGTAAACA ATGCTTTTTG GAAAAAAGAG AATATGACCC AAAAATTAAT TGATGTAACC      7560

AATGAATGGC ATGATAAGGT GGATCAGGCA GATCAGAGCA TCTTGAATAT GCTTTTTGAA      7620

CATAAATGGT TGGAATTGGA CTTTGATTAT AATCATATTG TCATTCATAA ACAGTTTGCT      7680

GATTATCAAT TGCCTGAGGG TCAGGATTAT CCTGCTATTA TTCACTATCT TTCTCATCGG      7740

AAACCGTGGA AAGATTTGGC GGCCCAAACC TATCGTGAAG TTTGGTGGTA CTATCATGGG      7800

CTTGAATGGA CAGAATTGGG ACAAAACCAT CATTTACATC CATTACAAAG ATCTCACATC      7860

TATCCAATAA AGGAACCTTT CACTTGTCTA ATCTATACTG CCTCAGACCA TATTGAACAA      7920

ATTGAGACAT TGGTTCAATC CTTGCCTGAT ATTCAGTTTA AGATAGCAGC TAGAGTAATA      7980

GTTAGTGATC GATTGGCTCA GATGACAATT TATCCAAACG TGACTATATT TAACGGAATT      8040

CACTATTTGG TAGATGTCGA TAATGAATTG GTAGAAACCA GTCAAGTACT TTTAGATATT      8100

AATCATGGCG AAAAGACAGA AGAAATTCTC GATCAATTTG CTAATCTTGG CAAGCCTATC      8160

TTATCCTTTG AAAATACTAA AACCTATGAA GTAGGTCAGG AGGCATATGC TGTTGACCAA      8220

GTTCAAGCAA TGATTGAAAA ATTGAGAGAA ATAAGCAAAT GAAGAAAAAT CATTTAGTAG      8280

GAGATGCTCT GATTTTGACG GTTAGTGATC AGATTGAAGA GTTGGATTAT TTTTTATAAA      8340

ATTTCTCCGT TCATCATATA TGAAAGTTGT TCAAACATCA GAGTGCTTTA TAAAATATAA      8400

ATAGACCTAA AGATATTTAA TATGAACTGC ACCCCAAAAG TTAGACAGAA AAAATCTAAC      8460

TTTTTGGsGT CAGTACAATA TTAGGGTGTG ATTAATTATC TTTTTAGGTG AAAATGATTC      8520

TATATTATAG CTGTTTGATA CGAAATTTAT TATAAGGAAA TTATGTTAAT GAATACAAAA      8580

TCTATAGTTT TTAATGCAGA TAATGATTAT GTAGATAAAT TAGAAACTGC AATTAAATCT      8640

ATTTGTTGTT ATAATAATTG TTTAAAATTT TATGTATTTA ATGATGATAT TGCGTCAGAG      8700

TGGTTTTTGA TGATGAATAA GCGATTGAAG ACTATACAAT CTGAAATCGT TAATGTAAAG      8760

ATTGTAGATC ATGTTCTTAA AAAGTTTCAT TTACCGTTAA AGAATTTAAG TTATGCCACT      8820
```

```
                                         580
TTCTTTCGTT ATTTTATACC TAATTTTGTC AAAGAAAGTC GTGCTTTATA CCTAGATTCT      8880

GACATCATTG TTACAGGAAG TTTAGACTAT TTATTTGATA TAGAACTAGA TGGTTATGCC      8940

TTGGCAGCAG TAGAAGATTC TTTTGGTGAT GTTCCTTCTA CCAATTTTAA CTCCGGAATG      9000

TTATTAGTTA ATGTAGATAC TTGGAGAGAT GAAGATGCTT GTTCGAAACT GTTAGAACTG      9060

ACCAATCAAT ATCATGAAAC AGCATATGGA GATCAAGGAA TTTTAAATAT GTTATTCCAT      9120

GATAGATGGA AAAGATTAGA CCGAAATTTT AATTTTATGG TGGGGATGGA TAGCGTCGCA      9180

CACATAGAAG GAAATCATAA ATGGTATGAG ATTTCTGAGT TGAAAAATGG AGATTTACCT      9240

AGTGTTATAC ATTATACTGG GGTAAAACCT TGGGAAATAA TTTCCAATAA TCGCTTTAGA      9300

GAAGTTTGGT GGTTTTATAA TCTGTTAGAA TGGTCTGATA TTTTATTGAG AAAAGACATT      9360

ATTAGTCGTA GTTTCGAAGA ACTTGTATAC AGTCCTAAAG CTCATACAGC AATTTTTACA      9420

GCTAGTTGTG AGATGGAGCA TGTAGAATAT TTGATAGAAA ATTTACCAGA GGTACATTTT      9480

TCTATACTAG CACATACATA TTTTGCGTCT AGTGTCGTTG CTTTATTAAG ATATAGCAAT      9540

GTTACGATTT ATCCTTGTTT TTCTCCATTT GATTATCGAA AAATTTTGGA TAATTTAGAT      9600

TTTTATTTAG ATATTAATCA TTATAAAGAA GTGGATAATA TTGTATCCGT TGTTCAACAA      9660

CTATCTAAAC CAATTTTTAC CTTTGAAAAT ACTAGTCATG ATATAGGCAA TCAAACTAAT      9720

ATATTTTCTT CAACCGAACC AAACAAAATG GTAGAGGCTA TTAGACAATT TATAGGAGAA      9780

TAAGTTTATG GCAGACGAAC TAATTAGTAT TGTAGTTCCA ATCTACAACG TTGAGAATTA      9840

TTTGCGAATG TGTTTGGATA GCATTCAGAA TCAGACGTAT CAAAATTTTG AGTGTTTATT      9900

AATCAATGAT GGCTCTCCAG ATCATTCATC CAAAATATGT GAAGAATTTG TAGAGAAAGA      9960

TTCTCGTTTC AAATATTTTG AGAAAGCAAA CGGCGGTCTT TCATCAGCTC GTAACCTAGG     10020

TATTGAATGT TCGGGGGGGG GCGTACATTA CTTTTGTAGA CTCTGATGAT TGGTTGGAAC     10080

ATGATGCTTT AGACCGATTA TATGGTGCTT TGAAAAAGGA AAACGCAGAT ATTAGTATCG     10140

GGCGTTATAA TTCTTATGAT GAAACACGCT ATGTGTATAT GACTTATGTT ACGGATCCAG     10200

ATGATTCTCT AGAAGTGATA GAAGGTAAAG CAATTATGGA TAGGGAAGGT GTCGAAGAAG     10260

TCAGAAATGG GAACTGGACT GTAGCTGTCT TGAAGTTATT CAAGAGAGAG TTACTACAAG     10320

ATTTACCATT TCCTATAGGA AAAATTGCAG AGGATACTTA CTGGACATGG AAGGTACTTC     10380

TAAGAGCTTC GAGGATAGTC TATTTGAATC GTTGTGTTTA CTGGTACCGT GTTGGTTTAT     10440

CTGATACTTT ATCGAATACA TGGAGTGAAA AGCGTATGTA TGATGAAATT GGGGCTAGGG     10500

AAGAAAAGAT AGCTATTTTA GCAAGTTCAG ACTATGACTT GACCAATCAT ATTTTGATTT     10560

ATAAAAATAG ATTACAAAGA GTGATAGCAA AATTAGAAGA ACAAAATATG CAGTTCACAG     10620
```

581

```
AGATTTACAG AAGAATGATG GAAAAATTGT CTTTACTTCC GTAGATAGTA ATAAAAAATG   10680

AGATAGCGTA ATATGAAACT ACATTTAACA AATTTATACG GCATGGCTGG TGATAGTACG   10740

GTTATCTTAG CTCAAAATGC TGTTCAAAAG ATAGCTAGTC AACTGGGATT TAGAGAGGTT   10800

GGTATTTATT TTTACAACAT TGCTTCAGAT AGTCCTTCTG AAATGAATAA GCGTCTGGAT   10860

GGTATTATGG CCAGTATCTC TATTGGGGAT ATTTTAGTCT TTCAGTCTCC AACCTGGAAT   10920

GGTTTTGAAT TTGATCGTCT CTTGTTTGAT AAGCTAAAGG ATATGCAGGT GAAAATTATT   10980

TGCTTTATCC ATGATGTTGT TCCCCTCATG TTTGATAGTA ACTATTATCT CATGAAAGAT   11040

TATCTGTATA TGTATAATCT ATCAGATGTT TTGATAGTGC CGTCAGAGAG AATGAAAACA   11100

CGCCTGATGG AAGAAGGATT GACGACTAAG AAGATTCTTG TTCAAGGGAT GTGGGATCAT   11160

CCTCATGATT TATCCTTATA CACCCCTGCT TTTAAAAAAG AACTTTTTTT TGCTGGAAGT   11220

TTAGAGCGTT TTCCAGACTT ACAAAATTGG TCTCAAGATA CGCCTTTGAG AGTATTTTCA   11280

AATAAAGGGG AAGCTAGTTC TAGTGCTAGA AGTCTCAGCA TCGAAGGATG GAAAAAAGAT   11340

GAGGAATTGT TGCTAGAATT ATCAAAGGGT GGATTTGGCC TTGTCTGGGG AACCcATCAA   11400

AATGAGGGAG AAAGTAACCA ATACTATACC TTGAATATAT CTCATAAGGT GAGTACCTAT   11460

CTAACAGCGG GCATTCCAGT CATTGTACCA AGTAGCTTGT CAACTGCTAA ATTTATAGTA   11520

GATCAAGGCT TGGGCTTTAT GGCGGATAGT CTGGAAGAGG TTCATGAGAT AGTTGATAAA   11580

ATGAATCTAC AAGAATATCA AGAAATGACG AATCGTATCA AGACCTTTAG CTATTTGTTA   11640

AAAGAGGGCT ATTTCACTAA AAAGTTATTG GTAGATGCAA TCTATCACTT GGGAATTGAT   11700

TAAGGGAATG AAATGAACAA AACAATTGTA CTAGCAGGGG ATCGCAATTA CACCAGGCAG   11760

TTAGAAACAA CGATAAAATC TATTTTATAC CACAATCGAG ATGTTAAGAT TTATATTTTG   11820

AATCAAGATA TCATGCCAGA TTGGTTTCGC AAACCACGAA AAATAGCTCG CATGTTAGGT   11880

AGTGAGATTA TCGATGTTAA ACTACCTGAA CAAACTGTGT TTCAAGATTG GGAAAAGCAA   11940

GATCACATTA GTAGCATTAC TTATGCTAGA TATTTTATTG CAGATTATAT CCAAGAAGAT   12000

AAGGTTTTAT ATTTAGACAG TGATTTGATT GTAAATACTT CTTTAGAGAA ATTATTTAGT   12060

ATTTGTTTAG AAGAAAAATC ACTCGCAGCA GTTAAAGATA CAGATGGAAT TACATTTAAT   12120

GCAGGTGTTT TATTAATCAA CAATAAAAAA TGGCGTCAAG AGAAATTAAA AGAACGACTA   12180

ATTGAACAGA GCATTGTTAC AATGAAGGAA GTTGAAGAAG GCCGTTTCGA GCATTTTAAT   12240

GGTGATCAAA CGATTTTTAA TCAGGTCTTG CAAGATGATT GGTTAGAACT AGGTCGAGCT   12300

TATAATTTAC AAGTAGGGCA TGATATTGTG GCTTTGTATA ACAATTGGCA GGAACATCTG   12360
```

582

```
GCTTTTAATG ATAAACCAGT GGTGATTCAT TTTACGACCT ACAGAAAACC CTGGACTACC     12420

TTGACAGCCA ATCGTTATCG TGATTTATGG TGGGAATTCC ATGATTTGGA GTGGAGTCAG     12480

ATTTTACAAC ACCATATGGG AGAATTTGAA CTAATATCGC CTCTAGATAA GGAATTTTCT     12540

TGCTTAACCT TAACGAATTC CCAAGATTTA GAAGGAATAG AAGAGCTAGT TACAGCTCTA     12600

CCTGAGGTGG TATTTCATAT CGCAGCTTGG ACGGATATGG GAGATAAATT AAAAAAATTA     12660

GCTGTATATA ATAATGTGAG ATTGCATCCA CAAATTGTTC CACCGGTCTT AGATAAGCTG     12720

AAAAAGTCAA CAAATCTATA TTTGGATATC AATCATGGTA GTGCAGATGA GAACTTTTTA     12780

AAATCTTTGC AAGAACAAGA AAAAACGCTA CTAGCTTTTC AATCGACTCA GCACGGAGAG     12840

TTAGGACAAA TCGTTTTCGA AAATGGGAAA GTTTCCTTTA TGATTGATAC GATTAAAGAT     12900

TTTAAGAAAA ACGGACATCT TACCTGTTTT CGACAACTTC CAAGTTTAAC TTGTTTAACG     12960

TTTACGGCTT CTCAGTATAT CGAACAATTG GATTACTTGG CTGGACAGTT GCCAAATGTT     13020

GTTTTTCAAA TTGCTGCTTG GACAGCTATG GGGCCAAAAT TATATGATTT GTCTAATCGT     13080

TATCCTAATA TTCAGCTCTA TCCGGCAATT TCTAGAGATA AGCTAGACGA GTTGAAGGAG     13140

AAGATGGATG CTTATTTAGA TATCAACCTA CTGACTTCAA CATCCGATAT CGTTGCAGAA     13200

ATGGCTCATC TATCTAAACC TATACTAGCC TTTTATAAAT CTCAAAATGG GAATAATGGC     13260

CAAAGGTTGT ATTCAAGTGA ACATCCTGAA CGAATGTTGG CTGATTTGCA AAAAATTGATA     13320

ACTAAGGATA TGCTAGAAAA ACCGCTTGAT ATAATCCAGG TGAAAGGGAT AGATGAAACC     13380

TTGGATTATA TTATTGAACA CAACTCTTCT TTAGTTCGTT TTGGAGATGG GGAAATCAAT     13440

ATGCTTGCAG GGCATTCAAT TCCCTACCAG GATTATGATG AAGAGTTGGT TTCAATCATG     13500

AGGGACATTA TCGGCCAAGA AAGTCGAGAA GATTTAGTAG TGTGCCTTCC TGATGCTTTT     13560

ACAGATCGTT TTAGGTTTAC ATCGTGGGCG ATTCCATTTT GGAAAGATCA CATGGATCAT     13620

TATATGGATT TTTACAGAGA GTTATGCAGT GATTCATGGT ATGGCTCAAC CTTTGTATCT     13680

CGCCCTTATA TCGATTTTGA AGACAAGAGT CAAGCTAAAG CTCAATTTGA AAAATTGAAA     13740

AGCATTTGGG AAAACCGTGA CTTACTGATA GTCGAAGGTG CGACTTCTCG TTCAGGTGTC     13800

GGAAATGATT TATTCGATGA GGCAAATTCT ATTAAGCGAA TTATCTGTCC TTCTCATAGT     13860

GCCTTTTCTA GAGTTCATGA ACTTGAACAA GAAATTGAAA AGTATGCTGG TGGTCGCTTG     13920

ATTTTATGTA TGCTTGGACC TACAGCAAAA GTTCTGAGTT ATAATCTATG CCAGATGGGC     13980

TATCAAGTTT TGGATGTAGG CCATATTGAC TCAGAGTATG AATGGATGAA AATGGGAGCT     14040

AAAACTAAGG TTAAATTTTC TCATAAACAT ACTGCAGAAC ATAATTTCGA CCAAGATATT     14100

GAATTTATTG ATGATGAAAC CTATAACAGT CAGATTGTTG CACGAATATT AAACTAGACT     14160
```

583

```
ATTTAAAATA AATGATAAGG ATTTAAAATG AGAAATACCA AACGCGCTGT AGTATTTGCA    14220

GGTGATTACG CTTATATTCG ACAAATCGAA ACGGCGATGA AGTCACTCTG TAGACACAAT    14280

AGTCATTTGA AAATTTATCT GCTAAATCAG GACATTCCTC AGGAATGGTT TAGTCAAATA    14340

AGAATATATT TACAAGAGAT GGGGGGCGAC TTGATTGACT GCAAGTTAAT TGGCTCACAG    14400

TTTCAAATGA ATTGGTCTAA TAAATTACCT CATATCAATC ATATGACATT TGCACGCTAT    14460

TTTATTCCAG ATTTTGTAAC AGAAGATAAA GTTCTCTATC TAGATAGTGA TTTGATTGTG    14520

ACTGGTGATT TGACCGATTT GTTTGAATTA GACTTAGGTG AAAATTATTT GGCAGCAGCT    14580

CGTTCTTGCT TTGGAGCAGG AGTCGGCTTC AATGCTGGTG TTCTCTTGAT TAACAACAAA    14640

AAATGGGGAT CTGAAACTAT TCGACAAAAA TTGATTGACT TAACAGAAAA AGAACATGAG    14700

AATGTGGAAG AAGGAGACCA GTCAATTTTG AATATGTTGT TTAAAGATCA ATATAGTTCC    14760

CTTGAAGATC AATATAATTT TCAAATAGGA TATGATTATG GGGCGGCAAC CTTTAAACAT    14820

CAATTCATTT TTGATATTCC GCTCGAACCA CTGCCACTAA TTTTACACTA TATTTCTCAG    14880

GATAAGCCTT GGAATCAATT TTCTGTTGGA CGTCTAAGAG AAGTTTGGTG GGAATACTCT    14940

TTGATGGATT GGTCTGTTAT TTTAAATGAA TGGTTTTCAA AGAGTGTGAA GTACCCTAGT    15000

AAATCACAAA TATTTAAGTT GCAATGTGTT AATTTAACGA ATTCTTGGTG TGTCGAGAAA    15060

ATCGATTATT TGGCGGAGCA ATTGCCAGAA GTTCATTTTC ATATTGTTGC TTATACAAAT    15120

ATGGCAAATG AACTACTAGC TTTAACGCGT TTTCCTAATG TTACCGTATA TCCAAATTCC    15180

TTACCAATGT TATTGGAACA AATAGTAATA GCTTCAGATT TGTATTTGGA TTTGAATCAT    15240

GATCGAAAAT TAGAAGATGC ATATGAGTTT GTGCTTAAGT ACAAAAAACC AATGATAGCT    15300

TTCGACAATA CTTGCTCTGA AAATCTTTCT GAGATTTCAT ATGAAGGTAT CTATCCAAGC    15360

TCCATTCCGA AAAAAATGGT TGCAGCAATC AGATCTTACA TGAGGTAGAG AACAGTATGA    15420

GAAAATCAAT AGTATTAGCG GCAGATAATG CCTATCTTAT TCCTTTAGAG ACGACTATAA    15480

AGTCTGTATT GTATCACAAT AGAGATGTTG ATTTTTATAT TCTCAACAGT GATATAGCTC    15540

CTGAATGGTT TAAAATTATTG GGGAGAAAAA TGGAAGTTGT GAATTCTACA ATTCGCAGTG    15600

TACACATTGA TAAAGAACTT TTTGAAAGCT ATAAAACAGG ACCTCATATA AATTATGCTT    15660

CTTACTTTAG ATTTTTTGCG ACAGAAGTGG TTGAATCTGA TAGGGTATTG TATCTGGATT    15720

CCGATATCAT TGTAACTGGG GAACTAGCTA CTTTGTTTGA GATAGATCTC AAAGGATATT    15780

CAATTGGTGC TGTTGATGAT GTCTATGCCT ATGAAGGACG AAAATCTGGA TTTAATACTG    15840

GTATGTTACT AATGGATGTT GCAAAGTGGA AAGAACATTC TATTGTCAAT AGTTTATTGG    15900
```

584

```
AATTAGCGGC CGAGCAGAAT CAAGTTGTTC ATCTTGGGGA TCAGAGTATT TTAAATATTT     15960

ATTTTGAGGA TAATTGGCTA GCCTTAGATA AAACATATAA TTATATGGTG GGTATTGATA     16020

TTTATCACCT TGCTCAAGAA TGTGAACGTC TAGATGACAA TCCACCTACA ATTGTTCACT     16080

ATGCTAGTCA TGATAAACCT TGGAATACAT ATAGTATATC TAGACTACGT GAATTATGGT     16140

GGGTTTATAG AGATTTGGAT TGGTCAGAGA TTGCTTTTCA ACGTTCCGAT TTAAATTATT     16200

TTGAAAGAAG CAATCAGTCT AAAAAACAAG TGATGCTTGT GACATGGAGT GCAGATATAA     16260

AACATTTAGA GTATTTAGTA CAACGGTTAC CTGATTGGCA TTTTCATTTG GCTGCACCGT     16320

GTGATTGTTC TGAGGAGCTG ACCTCTCTAT CACAGTATAC GAATGTAACA GTATATCAAA     16380

ATGTATTACA TAGTAGAATT GATTGGCTAT TGGACGATTC TATAGTTTAT TTAGATATTA     16440

ATACAGGTGG AGAGGTTTTT AATGTAGTTA CAAGGGCACA AGAAAGTGGC AAGAAAATCT     16500

TCGCTTTTGA TATCACACGT AAAAGTATGG ATGATGGACT CTATGACGGT ATTTTTTCTG     16560

TGGAGAGACC AGATGATTTA GTGGATAGAA TGAAGAATAT AGAGATAGAG TAATGAGTGA     16620

ATTAATTAGT GTTGTGGTAC CGATATACAA TACGGGAAAA TATTTAGTGG AGTGTGTCGA     16680

GCATATTCTG AAGCAAACCT ATCAAAATAT AGAAATTATT TTAGTTGATG ACGGTTCTAC     16740

GGATAATTCT GGGGAAATTT GTGATGCTTT TATGATGCAA GATAATCGTG TGCGAGTATT     16800

GCATCAAGAA AATAAGGGGG GGGCAGCACA AGCTAAAAAT ATGGGGATTA GTGTAGCTAA     16860

GGGAGAGTAC ATCACGATTG TTGATTCAGA TGATATCGTA AAAGAAAATA TGATTGAAAC     16920

TCTTTATCAG CAAGTCCAAG AAAAGGATGC AGATGTTGTT ATAGGGAATT ACTATAATTA     16980

TGACGAAAGT GACGGGAATT TTTATTTTTA TGTAACAGGG CAAGATTTTT GCGTCGAAGA     17040

ATTAGCTATA CAAGAAATTA TGAACCGTCA AGCAGGAGAT TGGAAATTCA ATAGCTCGGC     17100

CTTTATATTG CCGACATTTA AGTTGATTAA AAAAGAATTA TTCAATGAAG TTCACTTTTC     17160

AAATGGTCGC CGCTTTGATG ATGAAGCAAC TATGCATCGC TTTTATCTTT TAGCCTCTAA     17220

AATCGTCTTT ATAAACGATA ATCTCTATCT GTATAGAAGA CGTTCAGGAA GCATCATGAG     17280

AACGGAATTT GATCTTTCCT GGGCAAGAGA TATTGTTGAA GTGTTTTCTA AGAAAATATC     17340

GGATTGTGTC TTGGCTGGTT TGGATGTCTC CGTTCTGCGT ATTCGATTTG TCAATCTTTT     17400

AAAAGATTAT AAGCAAACTT TAGAATACCA TCAATTAACA GATACTGAGG AATATAAAGA     17460

TATTTGTTTC AGATTAAAGT TGTTTTTTGA TGCAGAACAA AGAAATGGTA AAAGTTGAAA     17520

TAAAAGAATT GTTATTTACC ATATCACAAA CAATGAAGGT GAGGGGAGTG TTTTATGACT     17580

AAGATTTATT CGTCAATAGC AGTAAAAAAA GGACTATTTA CCTCATTTCT ACTGTTTATC     17640

TATGTATTGG GAAGTCGTAT TATTCTCCCT TTTGTTGACC TAAATACTAA AGATTTTTTA     17700
```

585

```
GGAGGTTCAA CAGCCTATCT AGCCTTCTCA GCCGCCCTAA CAGGTGGGAA TCTAAGAAGT    17760

TTATCAATTT TTTCTGTTGG ATTATCCCCT TGGATGTCCG CCATGATTTT ATGGCAGATG    17820

TTTTCTTTTT CTAAACGGTT GGGTTTAACA TCTACGTCTA TAGAAATACA AGATCGCCGT    17880

AAAATGTACC TGACCTTGCT AATTGCTGTG ATTCAATCCT TGGCAGTTAG CTTGAGACTG    17940

CCAGTACAAT CCTCCTATTC TGCAATATTG GTTGTTCTAA TGAATACAAT ATTGCTGATA    18000

GCAGGAACAT TTTTTCTTGT TTGGTTGTCA GATTTAAATG CGAGTATGGG GATTGGAGGT    18060

TCTATTGTAA TCCTCCTATC CAGTATGGTT TTAAATATTC CTCAGGATGT TTTGGAAACA    18120

TTTCAGACAG TACACATTCC AACAGGGATT ATTGTGTTAC TTGCTTTATT AACCCTTGTC    18180

TTTTCTTATT TACTTGCCCT TATGTATCGA GCTCGCTATT TGGTTCCTGT TAATAAAATT    18240

GGCTTACACA ATCGATTTAA ACGCTATTCT TATCTCGAAA TCATGTTGAA TCCTGCAGGT    18300

GGGATGCCTT ATATGTATGT GATGAGTTTT CTTAGTGTAC CAGCTTATTT GTTCATCTTG    18360

TTGGGATTTA TTTTCCCTAA TCATTCAGGG TTAGCGGCTT TATCAAAGGA ATTTATGGTT    18420

GGAAAGCCTT TGTGGGTCTA TGTTTATATT TCGGTCTTAT TTTTATTTAG TATCATTTTT    18480

GCTTTTGTTA CGATGAATGG AGAAGAGATT GCAGACCGTA TGAAAAAATC TGGAGAATAC    18540

ATTTATGGTA TTTATCCAGG TGCGGATACT AGTCGATTTA TTAATCGATT GGTCCTTCGT    18600

TTCTCAGTCA TAGGTGGTCT CTTTAATGTG ATTATGGCAG GTGGTCCCAT GCTTTTTGTT    18660

TTGTTTGATG AAAAGTTATT ACGATTGGCA ATGATTCCAG GCTTATTTAT GATGTTCGGG    18720

GGCATGATTT TTACGATTAG AGACGAGGTC AAGGCTTTAA GGCTAAATGA GACCTATAGA    18780

CCTTTGATTT AGGAGACTTT TATGTATTAT TTTATTCCAG CTTGGTATGG GTCAGAAAGA    18840

ACATGGCATG CAGATATCAC TCCATGGTAT TTTTCTCATT TTCGTCTAGA GTTTGATGAT    18900

ACCTTTCACC AGATTCGGCT CTTTCAAGAG CAAGATATAG ATTCTCGTCT ATTAGTATTA    18960

GCTTACCAGC CTCATCTACG TTATTTTTTA TATAGACATG GTGTGTTAGA AATGGATACT    19020

TATTCCGTTT TTGATGTTAT GCAAGATTTT CATAATCTCC ATACCCAAGT TTTAAGCATT    19080

AGAGATATTG AGTGGGATGA TGACTGTGAA TTTATTTATA GTCCCTTTAC GATTATCGTT    19140

CAAAAAAATG GGAAGAAATT TGCTAAGGTT GAACATGGAG TTGAAGGCTT CATCAGTGAT    19200

ATACAGTATT TTGAACCAAA TGGTCAAATA CATATGCACC ATATCGTGGA TGATCGTGGG    19260

TTTGTATCGA GCATTATCTT TTTTGAAGAT GGGCAAGCAG CCTATCAAGA ATATCTGAAC    19320

CTCAAGGGAG AGTGGCAATT CAGAGAGCGT TTAAAAGAAG GAGGACAGGT AGAAGTCAAT    19380

CCAATTTTGG GTTATCGCTT TAAAATGCTT ACCTATCAAA ATATGGGAGA TCTGGTGGCA    19440
```

586

```
GAATTTTTTG AGAATTATCT GCAAACGTAT GTGAAGGATC AGGATATTTT TATGCTTCCT    19500

TCTCATTCTC ATCATGACCA GTTGGTACTA GATCGTTTAC CTAGTACTAA TCCTAAACTG    19560

TTGAGTCTGT TCATTGGACG TAATCCTCAA GATACCTTTA GGGATTTAGA TGTAACTTTT    19620

GAAAAATCGG ATTTGATTTT GGTGGATAGA GAGGATAGTT TACGATTGTT GCAGGAGTTG    19680

TATCCTGAAC GAATGCATCA ATGTTATCAT TTATCATCTT TTGACACCCG ATTACGATTG    19740

GGACGAAGCC AAACTAAGAA AGAATCCATC ATTTATTTTC AACTGGATTT TGAGCAGGGG    19800

ATTGATAATC AAGCTCTGCT TCAAGTCTTG TCCTTTGTCG CTGAAAATAA GGATACTGAG    19860

GTGATTTTTG GAGCCTTTGC TGCTAGTCAG GAGCAAATGA ATGAGGTTGA AGGGATTGTT    19920

GAGTCTTTCA TCCAAGAAAA CATTCAATCC GAAAATCTGG GAAAGGCGAT TGATTATGGT    19980

GATGCAGAAA ATCCTCTGGA AGAAAATCAA CACCAGGACT TACGCTTACA GTTTGTTAAC    20040

TTGAATGATG AGTTAGATTT GATAAAAACA CTAGAATTTG TCCGTTTGAT TGTGGATTTA    20100

AATAGACATC CTCATCTCTA CACACAGATT GCTGGGATTA GTGCAGGAAT TCCTCAAATC    20160

AACCTAGTTG AAACCGTCTA TGTTGAACAT TTAAAAAATG GTTATTTGTT AGCAGATGTT    20220

ACAGAATTTT CTAAGGCTGC ACATTATTAC ACAGATAGGT TGAAGGAGTG GAATGAGTCC    20280

TTGATATATT CAATTGATAA GATTAAGGAG CACACAGGAC AACAATTTCT TGGAAAATTA    20340

GAGAAATGGA TAGAGGAGGT TAAAAATGTC AAAGGAACTT AATATTTTAC AGATAGGACT    20400

TGCCAATTGG GAAAATCACT ATGACATACC TGAAAATATG AGTTGGTATT ATTTTTACCC    20460

AAACTCATCA AAAGCCCTTC GTGAAATAAT TGAAAAAGAG GATATTAACC GTTTTCATGC    20520

AGTTTTAATA GAAGATGGTC AGTATTCCAG AGACTTATTT TCCTATGTAA AATATTTTGA    20580

ACCTTATACT TTATTTTATA ACCAGAATCT ACAAATAAAT GATAGAGAGG TTGTGGATTT    20640

TCTAAAAAAA CGATGTGCAC AAGCAATTGA TTTTTTAAGT CCCCAACAAC TAATCAATGA    20700

TTTAAGTAAA TCTCTTTTTG GCGGTGGGTA TGGTGATAAA CTCTTTCCTC CGACGATACA    20760

AGTCAATCCA AATTTTACAG GAGCTATTTC TTATCAAGGA TTGGATTATG TCAGTTTGGA    20820

AGGTGAGTTT GGGCAAGATT TTGCCCAGCT TGCCTATTGG GCTTATAATA TTATGGTGCA    20880

AAAAACACTC CCTATTGAGT TGTGGCTTGA ATATGAGAAG GAAGGCAATT GTGACTTTCG    20940

TTTAGTAATC CGTAAAATGT GGAGTGGGTC TGTTGATGAT TTCTTTGAAG AAGTAATAGT    21000

ATCTGAAAAA GACTTGGAGC AAGCACTTTT TATGGATAGT CGAGACGGAG ACTACTTTCT    21060

CTCGATATCT GTTGAAGCAA GAGGTCGTGG AACTATCAAA CTAGGTAATC TTCACCAACG    21120

ATGGAGTCGA AAACAATTTG GTAAGTTTGT ACTTGGTGGA AATATCCTAC ATGATTCCAA    21180

GCGTGATGAA ATAAACTATT TCTTCCATCC AGGTGATTTT AAACCGCCTT TGACTGTCTA    21240
```

587

TTTTGCAGGT TATCGACCTG CAGAAGGATT CGAGGGTTAC TTTATGATGA AAACTCTTGG   21300

ATGTCCCTTC ATTTTATTTT CTGATCCACG TTTAGAGGGG GGAGCTTTTT ATCTCGGAAC   21360

GGATGAGCTA GAGGGAAAAG TAAAGGATAC GATCACTCAC TATCTTGATT ATTTAGGCTT   21420

TGATCATAAG GATTTGATTT TATCAGGTCT TTCTATGGGA ACGTTTCCGG CTCTCTATTA   21480

TGGTGCTTCT TTTGAACCCC ATGCCATCAT AGTTGGTAAG CCCTTGGCTA ATTTAGGAAC   21540

TATAGCTAGT CGTGGACGTT TGGACGCACC GGGTGTCTCT AACTTAGCTT TTGATTGTTT   21600

AATTCATCAT ACAGGTGGGA CAAGTTCTCA AGATATGACG GAGTTGGATC AGCGTTTTTG   21660

GAAAATTTTT AAACAAGCAA ATTTTTCAAA GACAACCTTT GGTTTATCCT ATATGAAAGA   21720

TGAAGAAATG GATCCACAAG CCTATGAACA ATTAGTGTCT TATCTGTGTA ATACAGGTGC   21780

GAAGATTTTA TCTAAAGGAA CTGCTGGACG ACACAATGAT GATACAGATA CCAATATTTC   21840

TTGGTTTTTG CACTTTTATA GAATGGTCTT AGAGACTGGT TTTGGAAGGG AGAAAAGATG   21900

ATTATTACAC AGAGACAGTC TATTCATTGG GGAGAAGTTG GTGGGACTTA TATGTATGGA   21960

ACAACTGTAT CTTATTACCC TGACAAAAGT GTTCGTCTGT ATAATCCTCT ATTGCCATCT   22020

GGTGAGATTC TAAAGACTTG GTTTTCTAGT GTCAATTACC AGGCTGCACG AACCCAACCT   22080

CAGCTTCCCT TATTAAAAAG AAAGCAGGAG TATCAACTAT CACTGGTTTT TGACTGTCAG   22140

CCTGAAAATG GAGTTTATAC CAAGATAACT TTTTTTGACC GCTATGGTGA TATTTTAGAA   22200

AAAAAGGTAG AAAAAGTGAA AGATTTCATA TTTACTTATC CAGAAGATAG TTATACTTAT   22260

CGAGTTTCTC TTTTAAGTGC TGGATTTGAG TCCTTAACTT TTTATCATTT TTCTATCAAG   22320

GAGATCAGAA GTGTTTAGAC GTTTAGGTCA AGATTTCCAG CTTAGGAAAG TGAAAAAGAT   22380

TTTAAAGCAG ATTAATGCCC TGAAAGGCAA GATGTCCTCT CTTTCGGATC AAGAATTAGT   22440

AGCTAAAACA GTAGAGTTTC GTCAGCGTCT TTCCGAGGGA GAAAGTCTAG ACGATATTTT   22500

GGTTGAAGCT TTTGCTGTGG TGCGTGAAGC AGATAAGCGG ATTTTAGGGA TGTTTCCTTA   22560

TGATGTTCAA GTCATGGGAG CTATTGTCAT GCACTATGGA AATGTTGCTG AGATGAATAC   22620

GGGGGAAGGT AAGACCTTGA CAGCTACCAT GCCTGTCTAT TTGAACGCTT TTTCAGGAGA   22680

AGGAGTGATG GTTGTGACTC CTAATGAGTA TTTATCAAAG CGTGATGCCG AGGAAATGGG   22740

TCAAGTTTAT CGTTTTCTAG GATTGACCAT TGGTGTACCA TTTACGGAAG ATCCAAAGAA   22800

GGAGATGAAA GCTGAAGAAA AGAAGCTTAT CTATGCTTCG GATATCATCT ACACAACCAA   22860

TAGTAATTTA GGTTTTGATT ATCTAAATGA TAACCTAGCC TCGAATGAAG AAGGTAAGTT   22920

TTTACGACCG TTTAACTATG TGATTATTGA TGAAATTGAT GATATCTTGC TTGATAGTGC   22980

588

```
ACAAACTCCT CTGATTATTG CGGGTTCTCC TCGTGTTCAG TCTAATTACT ATGCGATCAT    23040

TGATACACTT GTAACAACCT TGGTCGAAGG AGAGGATTAT ATCTTTAAAG AGGAGAAAGA    23100

GGAGGTTTGG CTCACTACTA AGGGGGCCAA GTCTGCTGAG AATTTCCTAG GGATTGATAA    23160

TTTATACAAG GAAGAGCATG CGTCTTTTGC TCGTCATTTG GTTTATGCGA TTCGAGCTCA    23220

TAAGCTCTTT ACTAAAGATA AGGACTATAT CATTCGTGGA AATGAGATGG TACTGGTTGA    23280

TAAGGGAACA GGGCGTCTAA TGGAAATGAC TAAACTTCAA GGAGGTCTCC ATCAGGCTAT    23340

TGAAGCCAAG GAACATGTCA AATTATCTCC TGAGACGCGG GCTATGGCCT CGATCACCTA    23400

TCAGAGTCTT TTTAAGATGT TTAATAAGAT ATCTGGTATG ACAGGGACAG GTAAGGTCGC    23460

GGAAAAAGAG TTTATTGAAA CTTACAATAT GTCTGTAGTA CGCATTCCAA CCAATCGTCC    23520

GAGACAACGG ATTGACTATC CAGATAATCT ATATATCACT TTACCTGAAA AAGTGTATGC    23580

ATCCTTGGAG TACATCAAGC AATACCATGC TAAGGGAAAT CCTTTACTCG TTTTTGTAGG    23640

CTCAGTTGAA ATGTCTCAAC TCTATTCGTC TCTCTTGTTT CGTGAAGGGA TTGCCCATAA    23700

TGTCCTAAAT GCTAATAATG CGGCGCGTGA GGCTCAGATT ATCTCCGAGT CAGGTCAGAT    23760

GGGGGCTGTG ACAGTGGCTA CCTCTATGGC AGGACGTGGT ACGGATATCA AGCTTGGTAA    23820

AGGAGTCGCA GAGCTTGGGG GCTTGATTGT TATTGGGACT GAGCGGATGG AAAGTCAGCG    23880

GATCGACCTA CAAAATTCGTG GCCGTTCTGG TCGTCAGGGA GATCCTGGTA TGAGTAAATT    23940

TTTTGTATCC TTAGAGGATG ATGTTATCAA GAAATTTGGT CCATCTTGGG TGCATAAAAA    24000

GTACAAAGAC TATCAGGTTC AAGATATGAC TCAACCGGAA GTATTGAAAG GTCGTAAATA    24060

CCGGAAACTA GTCGAAAAGG CTCAGCATGC CAGTGATAGT GCTGGACGTT CAGCACGTCG    24120

TCAGACTCTG GAGTATGCTG AAAGTATGAA TATACAACGG GATATAGTCT ATAAAGAGAG    24180

AAATCGTCTA ATAGATGGTT CTCGTGACTT AGAGGATGTT GTTGTGGATA TCATTGAGAG    24240

ATATACAGAA GAGGTAGCGG CTGATCACTA TGCTAGTCGT GAATTATTGT TTCACTTTAT    24300

TGTGACCAAT ATTAGTTTTC ATGTTAAAGA GGTTCCAGAT TATATAGATG TAACTGACAA    24360

AACTGCAGTT CGTAGCTTTA TGAAGCAGGT GATTGATAAA GAACTTTCTG AAAAGAAAGA    24420

ATTACTTAAT CAACATGACT TATATGAACA GTTTTTACGA CTTTCACTGC TTAAAGCCAT    24480

TGATGACAAC TGGGTAGAGC AGGTAGACTA TCTACAACAG CTATCCATGG CTATCGGTGG    24540

TCAATCTGCT AGTCAGAAAA ATCCAATCGT AGAGTACTAT CAAGAAGCCT ACGCGGGCTT    24600

TGAAGCTATG AAAGAACAGA TTCATGCGGA TATGGTGCGT AATCTCCTGA TGGGGCTGGT    24660

TGAGGTCACT CCAAAAGGTG AAATCGTGAC TCATTTTCCA TAAAAGGAGA AAATATGACA    24720

ATTTACAATA TAAATTTAGG AATTGGTTGG GCTAGTAGCG GTGTTGAATA CGCTCAAGCC    24780
```

589

```
TATCGTGCTG GTGTTTTTCG GAAATTAAAT CTGTCCTCTA AGTTTATCTT TACAGATATG    24840

ATTTTAGCCG ATAATATTCA GCACTTAACA GCCAATATTG GTTTTGATGA TAATCAGGTT    24900

ATCTGGCTTT ATAATCATTT CACAGATATC AAAATTGCAC CTACTAGCGT GACAGTGGAT    24960

GATGTCTTGG CTTACTTTGG TGGTGAAGAA AGTCACAGAG AAAAAAATGG CAAGGTTTTA    25020

CGTGTATTCT TTTTTGACCA AGATAAGTTT GTAACCTGTT ATTTGGTTGA TGAGAACAAG    25080

GACTTGGTTC AACATGCCGA GTATGTTTTT AAGGGAAACC TGATTCGGAA GGATTACTTT    25140

TCTTATACGC GTTATTGTAG CGAGTATTTT GCTCCCAAGG ACAATGTTGC AGTCTTATAC    25200

CAACGAACTT TTTATAATGA AGACGGGACT CCAGTCTATG ATATCTTGAT GAATCAAGGG    25260

AAGGAAGAAG TTTATCATTT CAAGGATAAG ATTTTCTATG GAAAGCAAGC TTTTGTGCGT    25320

GCCTTTATGA AATCTTTGAA TTTGAATAAG TCTGATTTGG TCATTCTCGA TAGGGAGACA    25380

GGTATTGGAC AGGTTGTGTT TGAGGAAGCA CAGACAGCAC ATCTAGCGGT AGTTGTTCAT    25440

GCGGAGCATT ATAGTGAAAA TGCTACAAAT GAGGACTATA TCCTTTGGAA TAACTATTAT    25500

GACTATCAGT TTACCAATGC AGATAAGGTT GACTTCTTTA TCGTGTCTAC TGATAGACAA    25560

AATGAAGTTC TACAAGAGCA ATTTGCCAAA TATACTCAGC ATCAGCCAAA GATTGTTACC    25620

ATTCCTGTAG GCAGTATTGA TTCCTTGACA GATTCAAGTC AAGGGCGCAA ACCATTTTCA    25680

TTGATTACGG CTTCACGTCT TGCCAAAGAA AAGCACATTG ATTGGCTTGT GAAAGCTGTG    25740

ATTGAAGCTC ATAAGGAGTT ACCGGAACTA ACCTTTGATA TCTATGGTAG TGGTGGAGAA    25800

GATTCTCTGC TTAGAGAAAT TATTGCAAAT CATCAGGCAG AGGACTATAT CCAACTCAAG    25860

GGGCATGCGG AACTTTCGCA GATTTATAGC CAGTATGAGG TCTACTTAAC GGCTTCTACC    25920

AGCGAAGGAT TTGGTCTGAC CTTGATGGAA GCTATTGGTT CAGGTCTACC TCTAATTGGT    25980

TTTGATGTGC CTTATGGTAA TCAGACCTTT ATAGAGGATG GGCAAAATGG TTATTTGATT    26040

CCAAGTTCAT CTGACCATGT AGAAGACCAA ATCAAGCAAG CTTATGCCGC TAAGATTTGT    26100

CAATTGTATC AAGAAAATCG TTTGGAAGCT ATGCGTGCCT ATTCTTACCA AATTGCAGAA    26160

GGCTTCTTGA CCAAAGAAAT TTTAGAAAAG TGGAAGAAAA CAGTAGAGGA GGTGCTCCAT    26220

GATTGAACTT TATGATAGTT ACAGTCAAGA AAGTCGAGAT TTACATGAAA GTCTAGGCGC    26280

TACTGGTCTT TCTCAACTTG GAGTGGTCAT CGATGCAGAT GGTTTTCTGC CTGATGGTCT    26340

GCTTTCTCCT TTTACCTATT ATCTAGGTTA CGAGGATGGA AAACCTCTCT ATTTTAATCA    26400

AGTTCCCGTT TCAGATTTTT GGGAAATTTT AGGAGATAAT CAGTCTGCTT GTATTGAAGA    26460

TGTGACGCAG GAGAGGGCTG TCATTCATTA TGCTGATGGA ATGCAGGCTC GCTTGGTTAA    26520
```

<pre>
                                    590
ACAGGTAGAC TGGAAAGACC TAGAAGGTCG AGTACGTCAG GTTGACCACT ACAATCGCTT   26580

CGGAGCTTGT TTTGCTACAA CGACTTATAG CGCAGATAGC GAGCCGATTA TGACAGTTTA   26640

CCAAGATGTC AATGGTCAAC AAGTTTTACT GGAAAACCAT GTGACGGGTG ATATCTTATT   26700

GACTTTGCCA GGTCAGTCCA TGCGTTACTT TGCAAATAAA GTTGAATTTA TCACCTTCTT   26760

TTTGCAAGAT TTGGAAATAG ATACCAGTCA GCTTATCTTT AATACTCTAG CGACTCCTTT   26820

CTTGGTTTCC TTCCATCATC CAGATAAATC TGGCTCGGAT GTCTTGGTAT GGCAGGAACC   26880

TCTCTATGAT GCCATTCCAG GTAATATGCA GTTGATTTTG GAAAGTGATA ATGTGCGTAC   26940

TAAGAAGATC ATCATTCCAA ATAAGGCGAC TTATGAGCGC GCTTTAGAGT TAACTGACGA   27000

GAAATACCAT GATCAGTTTG TGCACTTGGG TTATCATTAC CAGTTCAAAC GTGATAATTT   27060

CCTAAGACGA GATGCCTTAA TCTTGACCAA TTCAGATCAG ATTGAGCAAG TAGAAGCAAT   27120

CGCAGGAGCC TTGCCTGATG TCACTTTCCG TATTGCAGCG GTGACAGAGA TGTCTTCTAA   27180

GCTCTTAGAC ATGCTTTGCT ATCCTAATGT GGCCCTTTAC CAGAACGCTA GTCCACAGAA   27240

GATTCAGGAG CTGTATCAAC TGTCGGATAT TTACTTGGAT ATAAACCACA GTAATGAGTT   27300

GCTACAGGCA GTGCGTCAGG CCTTTGAGCA CAATCTCTTG ATTCTTGGCT TTAATCAGAC   27360

GGTGCACAAT AGACTTTATA TCGCTCCAGA CCATCTATTT GAAAGTAGTG AAGTTGCTGC   27420

TTTGGTTGAG ACCATTAAAT TGGCCCTTTC AGATGTTGAT CAAATGCGTC AGGCACTTGG   27480

CAAACAAGGC CAACATGCAA ATTATGTTGA CTTGGTGAGA TATCAGGAAA CCATGCAAAC   27540

TGTTTTAGGA GGCTAACATG TCAGAGGAAG ATTTATTTTA CAAAGACGTT GAAGGCCGCA   27600

TGGAAGAGTT GAAACAAAAA CCCATCAAGA AGGAAAAAGA AACCCGAGGG GAAAAGATTA   27660

GTAAGACTTT TTCACTTTTA CTGGGTTTGA TGATTCTGAT TGGTTTGCTC TTTACTTTGC   27720

TGGGAATTTT GAGGTAGATC TATGATTGAA ATACTAATTG TTTTAGCTAT TATCCTATCT   27780

CTTGCTTTGA TTGTATTGGT AACTATACAA CCCCGTCAAA ATCAACTATT TTCCATGGAT   27840

GCCACTAGTA ATATTGGTAA ACCAAGCTAC TGGCAGAGCA ACACCTTGGT CAAGGTGCTC   27900

ACTTTATTGG TGAGTTTGGC TTTATTTATT CTACTATTAA CCTTTATGGT GATTACTTAT   27960

AAATAAAAGA AAACTTCAGA TATTCACCTT TTGTGGATTG GTCTGAAGTT TTCTTTTTTA   28020

TACTCAATGA AAATCAAAGA GCAAACTAGG AAGCTAGCCG CAGGCTgCTC AAAACACCGT   28080

TTTGAGGTTG TAGATATAAC TGACGAAGTC AGCTCAAAAC ACCGTTTTGA GGTTGTAGAT   28140

ATAACTGACG AAGTCAGCTC AAAACACCGT TTTGAGGTTG TGGATAGAAC TGACGAAGTC   28200

AGCTCAAAAC ACCGTTTTGA GGTTGTGGAT AGAACTGACG AAGTCAGCTC AAAACACCGT   28260

TTTGAGGTTG TGGATAGAAC TGACGAAGTC AGCTCAAAAC ACCGTTTTGA GGTTGTGGAT   28320
</pre>

591

```
AGAACTGACG AAGctCAGTA ACATATATAC AGCAAGGCGA CGCTGACGTG GTTTGAAGAG    28380

TATTACTGTC TATATTTTTG GTAAAAATCA ACTTTTACTT GGATGAAGGT TTTGGCTTCA    28440

CGTAGGAGTT GAAGAAGGGT GGCGCGGGTT TCAAATTCTT CTCTTGTCTT GGGCAGACTG    28500

CGGTTCCGGA AGACTTCCAG ATAACGTTCA ATTTCATCTA GCAAATCAGA AGCAGGATTG    28560

GTCTGGCTCA GTTGACCTGC AATTTTTGAA AAGAGTTGCG CTAAGATCAG GCTTTCACTG    28620

GCGGCAAGGT GACAAGTGTT AATCTGTTGG GCCATGTTTC TCAGGATACG ACTTTGTCGC    28680

TGTCTCATCT CAAAGTAGTG GATATGGTAG TCTGTCTGGT GAAAGAGGTG GTCAGAGTGA    28740

TCCAAATAGA CCAGTCTGAG GGCTTCTTTC AAAAGCGTGT CTAATTCTGC TACCAGCTGT    28800

GCTCGGTTGC GTCCGTCTCC TCTGGATAAA TAGTATTTGA AGCGCTGGAG GATATCTTTT    28860

AACTTTTCTT CCACCAGCGT GTGGTAGTGC TGGATTTCCT CTTCTCGTGA AGGCATATAG    28920

AGATTAACAA GCAAGGCAAA TCCTGTACCA ATAGCAAAGA GAAGGAATTC ATTGACTAGA    28980

AGGTCTGGAG AGGTTGACTC TTGAACCAAG AGATGGCTAA CCAAAACAGT GCTTGGTGTG    29040

ATGCCAATTT CCCAGCCCAT CTTGTAGGCT AAAGGAACGT AGAAGGCCAG ATAGAGGCCG    29100

AGACTCCAGA TATGAAATCC GCTCAAGTGA AAAGCTAGAA CACCGATAGC CAGAGCTAGA    29160

AGCATAGAAA AAAGACGATT GCGAGCCAGT TTTAAAGTAC TTCTACGCGT ATCAGATAGG    29220

CTCAAGAGAG CGATAATTCC AGCCGAAACT GCTGACGAAA GATTGAGAAA ATAAGCAAGC    29280

AGGCAGGCAA GACAGGTAGC TAAGATGAGC TTGGTCGTAC GTTGGCTAAT AGACATAAGA    29340

ATTTCCTAAT AAGTTAGAAT AAAAGCGTAA AAGACAAGAC ATGAGCAGGC TTGCCTTGAT    29400

GAGTTATTTT TTACGGGTTG CTGCGTATTC GGCAACGGCG GTAAAGAGGA CATCTGTAGA    29460

AGAGTTAAGG GCTGTTTCAC ATGAGTCTTG GATGACACCA ATCACAAAAC CAACCCCAAC    29520

AATTTGTATG GCAATATCGT TAGAAATACC GAAAAGGCTA CAAGCAACTG GGATAAGAAG    29580

GAGGGAACCT CCGGCAATAC CTGAAGCATC ACAGGATGAG ATAGCTGCTA CCACACTGAG    29640

GACAAAGGCT GTGGCAAAGT CAACAGGAAT TCCAAGAGTG TTAACTGCAG CAAGGGTCAA    29700

AAGGTTAATG GTAATCGCTA CTCCAGCCAT ATTGATAGTA GAACCGAGTG GGATAGAAAC    29760

AGAATAGGTA TCTGGGTTGA GTCCAAGGTC ATGGCAGAGT TTCATGTTGA CAGGAATGTT    29820

AGTCGCAGAA CTACGAGTGA AAAAGGCTGT CACACCGCTG ACACGGAGGC AGTTCCAAAC    29880

TAGAGGGTAA GGATTGCGTC TCATAAAGAA GAAGGCAATC AAAGGGTTGA CCACAGGGGC    29940

AACAAAAAGC ATAGTCGTTA CTAATAGAAC CAATAAAATA CCGTAGTTGG CAAGGCTTCC    30000

GACTCCCTTG TCAGAAATGG TTTTAAAAAC AAGACCAAGG ATTCCAAATG GAGCCAGATT    30060
```

592

```
GATGATCCAT TCGACAATTT TAGAAGTCAC GTCAGCGATA GTTTTTAGCA ATTCTTGACT    30120

ATTTTTACTG GCTTCTCTCA TAGCGATTCC AAAAATGACT GCCCAAGATA AGATTCTAAT    30180

ATAGTTAGCA GTAAGCAGGG CGTTGACTGG GTTGTCAACC AGTTTGAGCA AGAGGTTGCT    30240

GAGAACCTGC CCAATCCCAT CTGGTGGTGC AATTTCAGTA TTGGCACTAT TTGGGGTAAT    30300

TTCAATAGGG ACGATGAAAT TTGCTAGTAC AGCTACAAGA GCAGCGGCGA AAGTCCCTAT    30360

CATAGGATAT ACAAGAAAAC AACAGTTTTC ATATTGCTAT CTTGTCCCTT TTGATGTTGG    30420

GAAAGGGCAT TGGCAACGAG AGCAAAGACT AGGATAGGAG CAACAGCTTT TAGACCTCCA    30480

ACGAATAAAT CCTCGAGTAG CCCAATCCCT GAGAGATTAG GAAGGGTCAG TCCTAGGATT    30540

CCCCACAAAG CATACCAATC AAGATACGCT TGACAAGGCT TGCCTTATTC CAAGCATGAA    30600

TGATTCTTTT CATAATAATC TCCTTTTTGT GTAGTGATTA TGATTATAGT ATAAATGATA    30660

GACAAAATCA AGAATTTTCT GTCTATTTTT TGAATATTTA TGGAGAATGA GACTGATGAA    30720

AATATGGTAT AATGAAATAA AGGAGTTTTA TATGCAAAAA TTTATTCAGG CTTATATTGA    30780

AAAGCTAGAT GTGACAACCA TTATCGAGAA TATTCTAACC AAGGTCATTT CTCTTTTACT    30840

GCTTTTAATT GTATTTTATA TTGCTAAAAA AATGCTTCAT ACCATGGTGC AGAGAATTGT    30900

CAAACCTTCT CTAAAAATGT CTCGTCATGA TGTTGGACGC CAAAAAACCA TCTCACGTTT    30960

ACTAGAAAAT GTGTTTAATT ATACGCTATA TTTCTTTTTA CTCTACTGCA TTTTGTCGAT    31020

TTTAGGTTTG CCAGTTTCTA GTTTGCTGGC TGGAGCTGGT ATTGCTGGGG TAGCGATTGG    31080

TATGGGAGCC CAAGGCTTTC TGTCTGATGT CATCAATGGC TTTTTCATCC TCTTTGAACG    31140

TCAACTGGAT GTGGGAGATG AGGTCGTTCT GACAAATGGA CCGATTACTG TATCGGGTAA    31200

GGTTGTCAGT GTGGGAATTC GTACGACACA GCTTCGTAGC GAGGAGCAAG CCCTTCACTT    31260

TGTCCCTAAC CGAAATATCA CAGTTGTTAG CAATTTCTCA CGCACAGACT AGACCTGTTA    31320

TTTTAAGTAA TTTGTGGTAC AATAGAGGGA GTTTAATAAG GAGAAAAGAT GGTTTTAGAA    31380

AAGCAGTTGG GCAATGGTTG TACCTGGATA GACCTAGACC TAGGAAAGTT GAATAAACTA    31440

GAAGACCTTT CTGAAATTTA CGGTTTGGAC AAGGAAACCA TTGAATACGC ACTGGATAGA    31500

AACGAGCGCG CCCACATGGA CTACCACCGT GAAAGTGAGA CGGTTACCTT TATCTATAAT    31560

GTCTTAGACG TAAAAAAGGA CAAGGCCTAC TATGAGACTT TTCCCATGAC CTTTATTGTC    31620

GAGCATCGTC GCCTGATTAC CATTAGTAAT ACCAAGAACG CCTATGTCAT TGAACAGATG    31680

ACTCGTTATC TGGAGAACCA TGACACGCTT TCGATTTATA AGTTTCTCTT TGCCAGTCTG    31740

GAAATCATCA GCAATGCCTA CTATCCTGTC ATTGAGCAGA TGGACAAGAG TAGGGATGAG    31800

GTCAATGACC TCTTGCGCCA GCGAACTACC AAGAAAAACC TCTTTGTCCT GTCTGATTTG    31860
```

593

GAGACTGGTA TGGTTTATCT GACGGCAGCT GCCAAACAAA ATCGGATTTT GTTAGAGCAT   31920

ATTCAAGGTC ATGCCTTGTA TCGTAGTTTT GATGAGATTG AGAGAGAACA GTTTGATGAT   31980

GCCATGATTG AGGCTCATCA GCTGGTATCC ATGACAGACC TAATCTCTCA GATTTTACAG   32040

CAGCTTTCAG CCTCTTACAA CAATATTCTA AACAATAATC TGAATGACAA TTTGACAACC   32100

TTGACTATCA TTTCAGTCTT GCTAGCTGTT TTGGCAGTCG TGACAGGCTT TTTCGGAATG   32160

AATGTTCCCT TACCTTTAAC AGATGAGCCC CATGCTTGGC TCTATATCAG TTTGGCTAGT   32220

GCAGGTTTGT GGATTGTTTT ATCCTTGTTA CTAAGGAAAA TTGCGAAAAA AAGTTAAGAA   32280

AAGGAGCCAG AATGGCGATT GAAAATTATA TACCAGATTT TGCTGTGGAA GCAGTCTATG   32340

ATCTGACAGT CCCAAGCCTG CAGGCGCAGG GAATAAAGGC TGTTTTGGTC GATTTGGATA   32400

ATACCCTCAT TGCTTGGAAC AACCCTGATG GAACGCCAGA GATGAAGCAA TGGCTACATG   32460

ACCTTCGGGA CGCGGGTATT GGCATTATCG TAGTGTCAAA TAACACCAAA AAACGCGTTC   32520

AACGAGCAGT TGAGAAATTT GGGATTGATT ACGTTTACTG GGCCTTGAAG CCCTTCACAT   32580

TTGGTATTGA CCGTGCTATG AAGGAATTCC ACTATGACAA AAAGGAAGTG GTCATGGTTG   32640

GTGACCAACT CATGACAGAT ATACGAGCAG CCCACCGTGC AGGGATTCGG TCAATTTTAG   32700

TCAAACCCTT GGTCCAACAT GACTCAATCA AAACGCAGAT TAACCGAACT CGTGAGCGTC   32760

GTGTTATG   32768

(2) INFORMATION FOR SEQ ID NO: 72:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14872 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

CCAGTCACAA AGAAATTGAG CGCGTTCAGc TGAGGATGCA CTATGATGCA AGCTACATTT   60

CATTTGATGG GATATTAAGA AAGGAGATTT TCATGACACT TTTAGATGTA AAACACGTTC   120

AAAAAATTTA TAAAACACGT TTTCAGGGCA ACCAAGTAGA AGCCCTCAAG GATATTCACT   180

TTACCGTAGA AAAGGGTGAC TACGTTGCCA TCATGGGTGA GTCTGGTTCT GGTAAATCAA   240

CTCTTCTCAA TATTCTAGCT ATGTTGGATA AACCAAGTCG TGGTCAGGTT TACTTGAATG   300

GAACTGACAC CGCAACTATT AAAAAATTCAC AGGCTTCTAG TTTCCGGCGT GAAAAGCTAG   360

GATTTGTCTT CCAAGACTTT AACTTGCTAG ATACTCTGTC TGTTAAGGAC AATATCTTGC   420

594

```
TTCCGCTTGT CTTGTCAAGA AGACCTATAA CGGAGATGAT GAAGAAATTG GTGGTGACAG        480

CTGAGAATCT GGGTATTAAC CAATTGCAAG AGAAGTACCC TTACGAGATT TCTGGTGGTC        540

AGAAACAGCG TGTAGCAGTA GCCCGCGCCA TCATCACAGA ACCTGAAATT CTCCTTGCGG        600

ACGAGCCAAC AGGAGCCCTT GATTCCAAGT CATCTGCAGC CTTACTTGAT GTCTTTAATG        660

AAATCAATGA GCGTGGGCAA ACCATCCTCA TGGTAACCCA CTCAACAGCA GCTGCTAGCA        720

GGGCCAAGCG TGTTCTCTTT ATCAAAGACG GCATTCTTTA CAACCAAATC TACCGTGGAG        780

AGAAGACAGA GCGTCAGATG TTCCAAGAAA TCTCTGATAC CTTGACTGTC ATGGCAAGCG        840

AGGTGAATTA GTATGTTTCG ATTAACCAAT AAGTTAGCGG TATCGAACTT GATTAAAAAC        900

CGCAAACTCT ACTATCCCTT TGCACTGGCT GTTCTCTTGG CAGTCACCAT CACCTATCTC        960

TTTTACTCCC TAACCTTCAA TCCAAAGATT GCGGAAATCC GTGGAGGAAC CACCATTCAA       1020

GCAACACTTG GATTTGGTAT GTTTGTCGTT ACCCTTGCGT CACcATTATC GTCCTCTATG       1080

CCAATAGTTT TGTCATGAAA AACCGTTCCA AGGAACTGGG TATATATGGC ATGTTAGGCT       1140

TGGAGAAGCG CCATCTAATC AGTATGACCT TTAAGGAGTT AGTGGTATTT GGGATTCTAA       1200

CTGTTGGAGC GGGTATCGGT ATTGGAGCCT TGTTTGACAA GTTAATTTTC GCTTTCCTGC       1260

TCAAACTAAT GAAACTGAAG GTTGAGCTGG TTGCTACCTT CCAAATGAAT GTTGTCATTG       1320

CAGTACTTGT TGTCTTTGGA TTGATTTTCC TAGGCCTCAT GTTCCTGAAT GCTCTTCGAA       1380

TCGCCCGTAT GAATGCCCTC CAGCTCTCGC GTGAGAAAGC AAGCGGAGAG AAAAGAGGTC       1440

GCTTCCTACC TCTCCAAACG ATTCTTGGTT CCATAAGTTT AGGGATTGGC TATTATCTTG       1500

CCCTTACGGT AACCGATCCT CTTACAGCCC TAACAACTTT CTTCCTAGCT GTTTTGCTGG       1560

TTATCTTTGG TACTTATCTA TTGTTTAATG CAGGGATTAC AGTCTTCCTA CAAATCTTAA       1620

AGAAAAACAA GAAATACTAT TACCAACCTA ATAACCTCAT ATCTGTTTCC AACTTGATTT       1680

TCCGTATGAA GAAAAATGCG GTTGGACTAG CAACCATCGC TATTTTGTCA ACAATGGTTT       1740

TGGTAACCAT GTCAGCAGCG ACAAGCATTT TCAATTCCGC AGAAAGCTTT AAAAAAGTTC       1800

TAAATCCTCA TGATTTTGGG GTTTCAGGGC AAAAATGTTGA AAAAGAAGAT TTGGACAAAC       1860

TCTTGAGCCA GTTTGCAAGT GACAAAGGTT ATAGTGTCAA AGAGAAAGAA GTACTTCGTT       1920

ACAGTAACTT TGGTATTGCA AATCAAGAAG GAACCAAGTT AACTATTTTT GAAAAAGGAC       1980

AAAACCGTGT CCAACCCACA ACAGTTTTCA TGGTATTTGA CCAAAAAGAT TATGAAAATA       2040

TGACTGGTCA AAAACTGTCT CTATCAGGAA ATGAGGTCGG TCTCTTTGCC AAAAATGACG       2100

GACTGAAAGG ACAGAAAGCT CTAACTCTAA ATGATCATCA ATTTTCTGTC AAAGAAGAAT       2160

TTAATAAAGA TTTCATTGTG AACCATGTTC CAAATAAGTT TAATATCTTG ACTACTGATT       2220
```

595

```
ACAATTACCT TGTTGTTCCT GATTTACAAG CCTTTTTGGA TCAATTCCCA GATTCGGCTA      2280

TCTATAATCA GTTTTACGGT GGTATGAATG TAAATGTCAG TGAAGAAGAA CAACTCAAGG      2340

TCGCTGAGGA GTATGAAAAC TACCTCAATC AATTTAATGC TCAATTAGAC ACAGAAGGTA      2400

GCTATGTTTA TGGTAGCAAT CTAGCAGATG CTAGTTCTCA GATGAGTGCC CTCTTTGGTG      2460

GTGTCTTCTT TATCGGTATT TTCCTATCCA TTATCTTTAT GGTCGGAACT GTTCTGGTCA      2520

TCTACTACAA ACAAATTTCT GAAGGCTACG AAGACCGTGA ACGCTTTATT ATCTTGCAGA      2580

AAGTCGGTTT GGACCAAAAG CAAATCAAGC AAACCATCAA CAAACAGGTT TTAACTGTTT      2640

TCTTCCTTCC TTTGCTCTTT GCCTTCATAC ATCTCGCCTT TGCCTACCAT ATGCTTAGCC      2700

TGATTTTAAA AGTGATTGGT GTACTGGATA CGACTATGAT GTTGATTGTG ACCTTGTCTA      2760

TCTGCGCTAT CTTCCTCATC GCCTATGTGC TGATTTTCAT GATTACTTCA AGAAGTTATC      2820

GCAAGATTGT GCAAATGTAA AAAAGATACC TCGACTTCAA AATCGAGGTA TTTCTTGTAT      2880

TCTAAATGCT GAAAAGTTGT CCGAGCAGGA AGGTAACTCC CATGGTCAAG AGACCAATAG      2940

CAAGGTTCCG AATCATAGCT GTTTTGGTTG GGGCTTTTCC AAGTCTAGCA CTTGTGTAAC      3000

CAGTGAGAAG AAGGGCCACA CCGACAATAA GGACGGTAGC AGGGATGCGG TAATCACTTG      3060

GAAAAATGGT CACTGACAGC ATTGGAGGCA AACTTCTAAG GAAAAAGGCA ACGAAGCTAG      3120

AAATGGCAGC GTGCCAAGGA TTGGTAAATT CTTCATACTC AATCCCATAT TTTTCCTCTA      3180

CCAGAGCCTT GAGTGGATTT TTAAGAAAGA TCTTATTGGT CAAGAGTTGG GCAGAAGTTT      3240

TGAATTCTCC ATTTTGGATA TAAGCAGCAT AGAGGGATTT TTTGGCTAGT TCCCTATCTT      3300

GGTCTAGCAA GAGTTTTTCT CGCGAAACGG CAGCTTCCTC GGTATCTTTT GGAGTTGAAA      3360

CGGATACATA TTCTCCACCA GCCATTGAAA AGGCACCAGC TAAGATAGCC GTAAAACCTG      3420

ATAAAAAGAT AATCCAGATA TTGGTCGTGG CACTGGCAAC TCCGATAACC ACACCAGCAA      3480

TGGAAATAAT TCCATCGTTA GCATCAAGAA CACCCGCACG CAGGATATTT AAACGACCTG      3540

CAAAATTTGA ATCAATTTCG TGATTTGTTT CTGACGCTAA ATTTCAAGTT CAAGTTAGCC      3600

ATCAAGAAGT CTTCTCTGGG TGACTTGTAG TCCAAGCATT TTTTAGGATA GTTGTTAATC      3660

CACTTTTCGA TGAATGCGAC TTCTTTGGGA GTCATTTTCT TGGTTCCCTT AGGTAACCAT      3720

CTACGAATGA GCCTGTTGTG ATTCTCATTA GTTCCCCTTT CCCAAGAGGC ATAGGGATGT      3780

GCATAATAAA TGTGCTCCTC AGAAAATACA TTAGACAAGC GATTGAATTC CGTTCCATTA      3840

TCTGCCGTGA TGGAAAGAAT CTTGTGTTGT TTTAAGATGA GTTTTAGAGC CTGATTGACC      3900

ACATCAGCAC TTTTATTTGG AATCAATCGG ATGATCTGAT GTCTACTTTT TCGATCCGTC      3960
```

596

```
AAGACAAGCA AGCAGTAGTT TTTCGCTCTC GTAAGTAGAA CTGTATCAAT CTCATAATGC    4020

CCATTCTCCA AGCGAAAATT GATAGCTTCA AGCCGCTGTT CGATGGATTG ACCAGCAGGT    4080

TTAAAGTTGG TGCTGGCCTG TTTCTTAAGC GCTTTTCCTT TTCTAGGGTA AAGCAGATCC    4140

TGTTTGCTTA ACCCCAATTT TCCATGATGA ATCCAATAGT AAATGGTTGA AATTCCCACG    4200

TTAACCCCTT TAGCCATCAC CATCATTTCA GGCGAAAATT TTTGGTTATG ATAGTGGAGA    4260

ATCTTTTCCT TTAGTTCCTT GGTCAAGCTT GATTTCTTGA CCGAGCGCTT GCGATTGTTT    4320

TCATAAGACT GTTGAGCATA GTCGGCAGAA TAAACCTCTT TGAAGCGCCC TTTTCCAAGA    4380

CATTGTCGGA CTGTCCCACG CTTGATTTCA GTGTGGATAG TTTGAGGAAC TTTTCCAAGC    4440

AGAGAGGCAA TTTCTCTATT TGATTTCCCT TCTTTTTTCC ATCTTTCGAT TAAGCGACGG    4500

CTATCGATTG TCAAATGTTC GCCTTTTGTA GTATAATGGT TTTGCATCTC TGTGCCTTTC    4560

TTGTGTTTGT GGTTGAACAA CAAGTATAAC ACAGAGGTGT TTTCTTATGC CTACAAGAGC    4620

TATCGGCTAG TTGAACCATC TAATTTTTAG GAGGGCTGGG TGGCTAACTT CATTATAGAA    4680

CTTTCATTTA CGAACATATA GTAAAATGAA ACAAGAACAG AACAAATCGA TCAGGACAGT    4740

AAAATCTATT TCTAACAATG TTTTAGAAGC AGAGGTGTAC TATTCTAGTT TCAATCTATT    4800

ATATTTTTGT TTTTTATCAA AAAATACTTT ACAAGTTCTT AAAAACATGA TATAGTAATA    4860

AAGCTTAGAA AATGAGATGA TGTTTTCTAG CAAATATAAA CCCGAGTAAA AAATGCCTAC    4920

GGACAGGCAG GGTTGAATGC CGAAGCGTGG TTGAAAAGCC ACATTATTGA TAGGGTTAAA    4980

AGCCTACTTT TATAAGTTGA TGTTAGGACA CTTGTCCTAA TTCATAAATT TTTAGTGTGG    5040

TGAAAGCACA CGTCATCTTG TGAAACGATC AATAAAGTAC GTAATATTTG CTACTAGAGA    5100

GTTAGGAAAC ATCGGGAACA GACATACTCA ACAGAAACCA AAATAAACAC GTCAGAAGAT    5160

TGCAGAGCAG GTGAAAACCT GCTCTTTTTT CATGAGTCAA CCTTTAGTTC CTTAGTTTTC    5220

ATAAGGTCCT AAAAATATTG AAAGGAGTAT GTTTTGAAAG AGTTAGATCA AAACCAAGCC    5280

CCAATTTATG AGGCCTTGGT GAAGTTACGC AAGAAAAGGA TTGTTCCCTT TGATGTTCCA    5340

GGTCACAAGC GTGGACGGGG AAATCCAGAA CTTGTCGAAC TCTTAGGAGA AAAATGTGTA    5400

GGCATTGATG TCAATTCGAT GAAACCTTTG GATAATTTAG GCCATCCTAT TTCGATTATT    5460

CGTGATGCAG AGGAGCTGGC TGCAGATGCT TTTGGAGCTA GCCATGCCTT TCTAATGATT    5520

GGTGGAACAA CTTCATCGGT GCAGACTATG ATTCTGGCAA CCTGCAAGGC AGGAGATAAG    5580

ATTATTCTGC CACGAAATGT CCATAAATCT GCTATCAATG CGTTGGTTCT ATGTGGTGCC    5640

ATTCCCATCT ATATCGAGAT GAGTGTAGAT CCTAAGATTG GTATCGCTTT AGGTCTTGAA    5700

AATGACCGAG TAGCACAGGC CATAAAGGAC CATCCAGATG CTAAGGCTAT CCTAATCAAC    5760
```

597

AATCCTACTT	ACTACGGCAT	CTGTTCAGAC	CTAAAGGGGT	TGACAGAAAT	GGCTCATGAA	5820
GCTGGCATGA	TGGTTTTAGT	AGATGAAGCC	CACGGAGCGC	ATTTGCATTT	CACTGATAAA	5880
CTTCCAATTT	CTGCTATGGA	TGCAGGGGCT	GATATGGCAG	CAGTTTCCAT	GCATAAGTCT	5940
GGTGGGAGTT	TGACCCAAAG	CTCCATTTTA	CTTATCGGGG	AGCAGATGAA	TTCTGAATAC	6000
GTTCGTCAGA	TAATTAACCT	GACCCAGTCT	ACATCTGCCT	CTTACTTGTT	GATGGCTAGT	6060
TTGGATATTT	CACGTCGCAA	CTTGGCCCTT	CGTGGTAAAG	AGTCGTTTGA	GAAAGTCATT	6120
GAGCTATCTG	AGTATGCCCG	CCGTGAAATC	AATGCTATCG	GTGGCTACTA	TGCCTACTCA	6180
AAAGAGTTAA	TAGACGGTGT	TTCGGTTTGC	GATTTTGACG	TAACTAAGCT	GTCAGTTTAC	6240
ACTCAGGGTA	TTGGCTTAAC	AGGTATCGAG	GTTTATGACC	TCTTGCGAGA	CGAATACGAC	6300
ATTCAGATCG	AGTTTGGTGA	TATCGGCAAT	ATCTTGGCCT	ATATTTCCAT	CGGCGACCGC	6360
ATCCAAGACA	TCGAGCGCTT	GGTTGGTGCT	CTGGCTGATA	TTAAGAGACT	CTATTCAAGA	6420
GATGGAAAAG	ATTTGATAGC	AGGAGAATAT	ATTCAGCCCG	AGTTAGTGCT	GTCTCCGCAA	6480
GAAGCCTTCT	ATTCAGAAAG	AAAAAGTTTA	ACTTTGGATG	ATTCTGTTGG	ACAGGTCTGT	6540
GGAGAATTTG	TTATGTGTTA	CCCTCCAGGT	ATTCCTATCT	TGGCTCCTGG	TGAACGCATT	6600
ACACGAGAAA	TTGTCGACTA	TATCCAATTC	GCCAAGGAAC	GTGGTTGCTC	CCTCCAAGGG	6660
ACGGAAGATC	CAGAGGTCAA	TCATATCAAC	GTTATTAAGA	GAAAGACAAA	CTATAAGAAA	6720
ACTCAATAGT	TTTATCTAAA	CTATTTCTTA	TTTCAATTTG	ATGATTTGGC	GATGATTTTA	6780
GAGCACGGCA	AAAAGCCCTT	GAATTAGAAG	CGGTCAATCG	CTTAATTTCT	ATCAGCTTAT	6840
CAAATCCTGC	CTCAAGCCTT	TTCTGAGGAT	TAGGGTAGCG	TGTCAAGAGT	TGGTAGGTAT	6900
ATTCTGAATG	CTTTCCAACG	ATTTTATCCA	ACTCAGGAAA	GATGATATCA	AGACAACGAG	6960
TGTATTGTAC	TTTCCAATCA	GACTGTTTTT	TCTTGAGACG	ATGAATATGT	CTAGCCAGTA	7020
TTTTTAGTTC	TACTTGCCGA	TTATCGTGTT	GAAATTGTTC	ACGATTGGGG	TCAGAAAGAA	7080
GTTTAAGAGC	GATGCCATGA	GCGTCTTTCT	TATCCGTTTT	AGTTTTGCGA	AGTGATAATG	7140
ATTTGGCAAA	TTTCTTGATG	AGCAAAGGAT	TGTAGGTGTA	AACTTTATAT	CCTTGTTCAT	7200
GCAGGAAGTT	CAGTAGATTA	AAGGCATAAT	GTCCGGTATT	TTCAAGAGCG	ATGAGACAGT	7260
CTTGGTTGAG	CTGTCGAAGA	GACAGATCTA	AGAGTTCAAA	ACCAGCTTTA	TTATTTGAAA	7320
AAGTGAGTGG	TTTAAGAACA	GTTTTTCCTG	GAACATTCAA	GGCTGTAACA	TCGTGTTTAT	7380
TTTTAGCGAC	ATCAATGCCC	ACATAAAGCA	TGGGAGTATC	TCCAGATATA	GTATTTCAAG	7440
TCTACTGGGT	TATCCACGAA	CTTTTTGCCT	TGTTACCTTA	GACGAGATAA	AACGTCTATG	7500

598

```
CGTTATCAAA CTCATTACCA ATTGAAACAA AAAACTGTGG TTAGAGCCTT TCGGAAATCG     7560

TCAAGCGATT GGAGGAAATG AACTAATCCA CAGTGGCTTA TTCCAAGTAT ACCACTTGGG     7620

CTTTGGCAGT AGCTAACTGC GCTAAATATA ATATAAGGAG AAATAGATGG ATTTATGGTT     7680

TTCTGAAGTT CATACTCCAG ATGTCAAATT GTCTCTGAGA ACAGCCAAGC AACTTTACGC     7740

TGGAAAAAGT GAATGGCAGG ATATCGAAGT CTTGGATACG CCAGCTTTTG GGAAAATACT     7800

GATTTTAAAT GGCCATGTCT TGTTCTCAGA TGCGGATGAT TTCGTCTACA ATGAAATGAC     7860

CGTTCACGTT CCCATGGCTG TCCACCCAAA TCCAAAGAAA GTATTGGTTA TTGGGGGTGG     7920

TGACGGCGGT GTTGCCCAAG TATTAACCCT CTATCCTGAA CTGGAGCAAA TTGATATTGT     7980

GGAACCGGAT GAGATGTTGG TCGAGGTCTG TCGTGAGTAT TTCCCAGACT TTGCTGCAGG     8040

GCTAGATGAT CCTCGTGTTA CCATTTACTA CCAAAATGGG CTACGCTTTT TGCGAAACTG     8100

CGAAGATGAT TACGATATTA TCATCAACGA TGCGACAGAT CCATTTGGCC ATACGGAAGG     8160

ACTCTTTACC AAGGAATTCT ACGGCAATAG TTATCGAGCT CTGAAGGAAG ACGGCATCAT     8220

GATTTACCAG CATGGGAGTC CCTTCTTTGA CGAGGATGAG TCGGCCTGCC GAAGCATGCA     8280

CCGCAAGGTC AATCAAGCCT TTCCAATCAG TCGGGTTTAT CAGGCCCATA TTCCAACTAG     8340

CCCAGCTGGC TATTGGTTGT TTGGATTTGC ATCGAAAAAA TACCACCCTG TCAAAGATTT     8400

TGACAAGGAA GGCTGGAAAA AACGCCAGCT TTTCACAGAA TACTACACTG CAAACTTACA     8460

CGTGGGAGCC TTTATGTTGC CCAAGTATGT TGAGGACATT TTAGAAGAAG AGGAAGGAAA     8520

AAAATGAGTC GTTTACTAGT TATTGGTTGT GGGGGCGTTG CCCAAGTTGC TATTTCAAAG     8580

ATTTGTCAAG ATAGCGAAAC ATTTACAGAG ATTATGATTG CTAGCCGTAC CAAGTCAAAA     8640

TGCGATGACT TGAAAGCGAA GCTAGAAGGC AAAACAAGTA CTAAAATTGA AACTGCAGCA     8700

CTTGATGCTG ACAAGGTTGA AGAAGTGATT GCCCTGATTG AAAGCTACAA ACCAGAAGCT     8760

GTTTTGAATG TAGCTCTGCC TTATCAAGAT TTAACCATTA TGGATGCTTG TTTGGCAACA     8820

GGTGTTCACT ATATCGATAC AGCCAACTAC GAAGCAGAAG ACACAGAAGA CCCTGAGTGG     8880

CGTGCTATCT ACGAAAAACG TTGTAAGGAA CTTGGTTTTA CAGCCTACTT TGACTACTCA     8940

TGGCAGTGGG CTTATCAAGA GAAATTCAAA GAAGCAGGCT TGACTGCTCT TCTTGGTTCT     9000

GGTTTTGACC CAGGTGTAAC TAGTGTCTTT TCAGCTTATG CCCTCAAACA CTATTTTGAT     9060

GAAATCCATT ATATCGACAT TTTAGACTGT AATGGCGGTG ACCACGGTTA TCCATTTGCA     9120

ACCAACTTTA ATCCAGAAAT TAATCTCCGT GAGGTTTCTG CGCCAGGTTC TTACTGGGAA     9180

GATGGGAAAT GGGTCGAAGT CGAAGCTATG TCTATCAAGC GTGAGTATGA TTTCCCTCAA     9240

GTTGGACAAA AAGATATGTA TCTCCTTCAC CATGAAGAAA TCGAATCATT GGCCAAGAAC     9300
```

599

```
ATTCCAGGTG TCAAACGCAT TCGTTTCTTT ATGACTTTTG GTCAATCTTA CTTGACGCAC      9360

ATGAAATGTC TTGAAAATGT TGGACTCCTT CGTACGGATA CCATTAACTT TAACGGCCAA      9420

GAAATTGTTC CAATTCAATT TTTGAAAGCC TTGCTTCCAG ATCCTGCCAG TCTTGGGCCA      9480

CGTACAGTCG GAAAAACCAA TATTGGATGT ATCTTTACAG GTGTCAAAGA CGGTGTCAAA      9540

AAGACTATCT ATATCTACAA TGTCTGCGAC CATCAGGAAT GTTACGCAGA GGTTGGTTCG      9600

CAAGCTATTT CTTATACGAC AGGAGTTCCA GCCATGATTG GGACAAAATT AGTCATGAAC      9660

GGAĂCTTGGA AACAAGCTGG AGTGTATAAC CTTGAGGAGT TAGATCCAGA TCCATTCATG      9720

GAAGCTTTGA ATGAGTATGG TTTGCCATGG GTTGTGGTTG AAAATCCACA AATGGTGGAC      9780

TAATGAAGTT AGAACAAGTA CCAACACCAG CCTATGTTAT TGACTTGGCC AAGTTAGAAG      9840

CTAATTGCCG CATTCTACAA TATGTACAAG AAGAGGCCGG TTGCAAGGTC TTGCTTGCCC      9900

AGAAGGCATA TTCCCTCTAC AAAACTTATC CCTTGATTAG CCAGTATCTA TCAGGTACGA      9960

CAGCTAGTGG ACTCTATGAG GCCAAATTGG CAAGGGAAGA ATTTCCTGGT GAAGTCCATG      10020

TATTTGCGCC TGCTTTCAAG GATGCAGACT TGGAGGAATT GCTAGAGATA ATGGACCATA      10080

TAGTCTTTAA CTCAGAGAGA CAGTTGCGTA AACACGGTCC GCGTTGTCGA GAGGCTGGTG      10140

TCAGTGTTGG TTTGCGCCTC AACCCTCAGT GTTCAACTCA AGGcAGATCA CGCGCTCTAT      10200

GACCCTTGTG CACCAGGTTC TCGCTTTGGA GTTACTATAG ACAAGATTCC GAGTGATTTG      10260

CTAGATTTGG TTGACGGACT TCATTTTCAT ACCCTTTGCG AGCAGGGAGC AGATGATTTA      10320

CAAACAACTT TGAAAGCAGT AGAAGAACAG TTTGGTCCCT ACTTACATGA GGTAAAATGG      10380

CTCAATATGG GTGGTGGTCA TCATATTACA AGAGAAGGTT ACGATGTGGA TTTGCTGATT      10440

TCAGAAATCA AGCGTATCCG AAAAACTTAC AATCTTGAAA TCTATATCGA GCCTGGTGAA      10500

GCCATTGCGC TTAATGCGGG TTATTTAGCA ACTGAGGTAT TAGATATTGT AGAAAACGGT      10560

ATGGAAATCT TGGTTTTAGA CGCCTCTGCG ACCTGCCATA TGCCTGATGT ACTTGAGATG      10620

CCCTATCGTC CACCTTTGAG AAAATGGCTTT GAGTCACAGG AAAAAGCCCA TACCTACAGA      10680

CTTTCTTCTA ATACCTGTCT GACGGGCGAT GTGATTGGTG ATTATAGTTT TGAAAATCCA      10740

GTCCAAATCG GAGACAGACT TTATTTTCAA GACATGGCCA TTTATTCTTT TGTCAAAAAT      10800

AATACCTTTA ATGGTATTGG ATTGCCAAGT CTCTATCTCA TGGACGAACA GGGAGACTGT      10860

AGCTTACTCA AAGCTTTTGG CTATCAAGAC TTTAAAGGGA GATTATCATG ATGGACAGTC      10920

CAAAAAAATT AGGCTATCAC ATGCCAGCAG AGTACGAACC CCATCATGGT ACCCTCATGA      10980

TATGGCCGAC TCGACCAGGA TCATGGCCTT TTCAAGGAAA GGCTGCTAAA AGAGCATTTA      11040
```

600

```
CTCAGATTAT CGAGACCATA GCAGAAGGGG AAAGAGTCTA TCTTTTGGTG GAGCAGGCCT    11100

ATCTATCTGA AGCCCAATCC TATCTTGGAG ACAAGGTTGT TTATTTAGAC ATTCCCACCA    11160

ATGATGCCTG GGCGCGTGAT ACTGGCCCAA CCATTCTCGT CAATGATAAA GGTAAGAAAT    11220

TAGCCGTGGA TTGGGCCTTC AATGCTTGGG GAGGCACCTA TGATGGTCTT TATCAAGATT    11280

ATGAAGAGGA TGACCAAGTA GCCAGTCGTT TTGCTGAGGC CTTGGAAAGG CCTGTCTATG    11340

ATGCTAAACC TTTTGTACTG GAAGGAGGCG CAATCCATAG CGATGGTCAA GGAACTATTC    11400

TCGTAACTGA AAGTTGCTTG CTTAGTCCTG GTCGCAATCC TAACTTGACT AAAGAGGAGA    11460

TTGAAAACAC ATTATTAGAA AGTCTTGGTG CTGAAAAAGT TATTTGGCTT CCTTATGGTA    11520

TTTATCAGGA TGAAACCAAT GAACACGTCG ATAATGTTGC TGCCTTTGTT GGTCCTGCTG    11580

AGCTTGTTTT GGCTTGGACA GATGACGAAA ATGATCCCCA GTATGCCATG TCAAAAGCAG    11640

ATCTCGAACT CTTAGAACAG GAAACAGATG CAAAAGGTTG TCACTTCACC ATTCATAAAT    11700

TGCCTATCCC TGCAGTTCGA CAAGTTGTGA CAGAAGAAGA TTTGCCAGGC TACATCTATG    11760

AAGAAGGAGA AGAAAAGCGA TACGCAGGTG AACGACTAGC AGCTTCCTAC GTAAACTTTT    11820

ATATCGCCAA CAAGGCTGTC TTGGTTCCAC AGTTTGAGGA TGTAAACGAC CAAGTGGCCT    11880

TAGATATCCT CAGCAAGTGT TTCCCAGACC GTAAAGTTGT CGGAATACCA GCCAGAGATA    11940

TTCTCTTAGG TGGTGGCAAT ATCCACTGTA TCACCCAACA AATTCCAGAA TAGGAGAAAA    12000

AGATGAGAAA TGTAAGAGTT GCAACCATTC AGATGCAATG CGCTAAGGAT GTGGCAACAA    12060

ATATCCAAAC CGCAGAGCGT TTAGTACGTC AGGCTGCTGA GCAAGGAGCC CAAATTATTC    12120

TCTTGCCCGA GTTGTTTGAA CATCCCTATT TCTGTCAGGA ACGTCAGTAT GACTACTACC    12180

AGTATGCCCA ATCTGTAGCG GAAAATACTG CCATTCAGCA TTTTAAGGTG ATTGCTAAGG    12240

AACTACAAGT TGTTTTACCA ATCAGTTTCT ATGAAAAAGA TGGTAATGTC TTGTATAACT    12300

CTATTGCCGT CATTGATGCA GATGGGGAAG TGCTGGGCGT TTATCGAAAG ACCCATATAC    12360

CAGATGACCA TTATTATCAA GAAAAATTCT ATTTCACGCC TGGTAACACT GGTTTCAAGG    12420

TCTGGAATAC TCGCTATGCT AAGATTGGTA TCGGTATCTG TTGGGATCAA TGGTTCCCTG    12480

AAACAGCGCG CTGTCTTGCA TTGAATGGTG CTGAATTGCT CTTTTATCCT ACAGCTATCG    12540

GTTCAGAGCC AATTTTGGAT ACAGATAGTT GTGGTCACTG GCAACGTACT ATGCAAGGGC    12600

ACGCAGCAGC GAATATTGTT CCAGTCATCG CAGCCAATCG TTATGGTTTA GAGGAGGTTA    12660

CTCCTAGTGA GGAAAATGGC GGACAGAGCT CCAGTCTTGA CTTCTACGGT TCCTCCTTTA    12720

TGACGGATGA AACAGGAGCT ATTCTAGAAC GAGCTGAAAG ACAAGAAGAA GCTGTTCTGT    12780

TAGCTACTTA TGACCTAGAC AAGGGAGCAA GTGAACGCCT AAACTGGGGC TTGTTTCGAG    12840
```

601

```
ATAGAAGACC AGAAATGTAT AGACAAATTA CAGATTAGTG TGGGAGAAAT GAGAGATTCA    12900

TTCTGCTAGA CTAACTTCTT ATTAGTAACT ATAAGATACT ATGGCATCTA GTAAATCGAT    12960

TTTTATGATT CGCTATTCTT GTCTATTGAT TAGTCCGTAT TTTAAAATAT TAGCAAAAAA    13020

GCAAATAGCA GTAACTTCTG TCTATTTGCT TTTCTTTTTT ATAGAATATA TTTCTCAATA    13080

GCACGCGCAA CGCCGTCTTC TTCGTTGCTT GAGGTAACGG CATCCGCAAG AGATTTGATA    13140

TAATCGCTGG CATTTCCCAT TGCAATCCCA AGCCCTGCAA ACTGGAGCAT TTCGATATCG    13200

TTATTAGCAT CGCCCATGGC CATAATCTCT GAGGAATCAA TCTTCAAAAT CTCAGCTAGT    13260

CGTGAAAGAG CAGTAGCCTT TGTCGTTCCA AGCGGCATTG CTTCATAAAT GACAGGCTGC    13320

GAACGAACTC CACTGAATCG TTGGCAAAGC TCTTCAGCAA AACGCTGCTC AAAATCGTCT    13380

GTTTGTTCTT TTGTTCCTAA ACACATACCT TGGAACATCC GGAACTTTCC ACTAGTCGCT    13440

TCTTCAAGAG AAATTTCAGT CAGGTCTGAA AATACTAGTT TAGCATCATT TTCAATAACT    13500

TGATTGGGCT TGTCACCGAG AACAAAATAA TGTGACTCGT CAAAAAGTGT CAACTGAACA    13560

TCACTCTTTT CAGCAAGGTC ATAGAGGTAT TCGATGTCAG CTGGACTCAG TTCTTTCCAG    13620

TCAACTAGAC TCCAATCACT GGTCTGGTGA GTTGAACAAC CGTTGTTAAC AATAATATAT    13680

TCGTTCTGGA GGTCAAGCTC CAGTTTTTTG TAGTAGGGGA GGACACCGAA AAGGGGGCGA    13740

CCCGTACAGA GAACCAGTTT GACACCTTTT TCAATGGCTT TGTGAATAGC AGTAATGTGT    13800

GCTTGTGGGA TTTCCTTGGC TTCATTGAGG AGGGTGCCGT CCATATCCAA GGCTAGTAGT    13860

TTAATCATAG GTCTTCCTCT TTATCTTTGC TATTATTATA GCATATTTTG GAGAAGAAAT    13920

TGATAGAAAG CTTGAGACTA ATTGATTTTA TAGTTTAAGA TGTTTTGATG ACAATTCATG    13980

ATTTGAAGAG GATATTTCGC AAAGATATGC TATACTATGT TTGTCAATGT TGCAACTAGA    14040

CAAATTAAAA AACCAACTTA ATATAATAGT TTTTTTGTAA GTAGGTATGA GTAGCAGATT    14100

ACTCAACTAA TCTGAAGAAT AATGGAGGAA ATATATCATG ATTTTAATGA CAAAAAATAT    14160

AAATCTAACA AATGAAGAAT TAGAGCTGAT ACAAGGTGGA GCAGATCCAT ATGGTAAAAA    14220

TCCTAATGGT AGGTACGATT GGGAAATAGA ACCAGTATTA ACTCTGCTGG TTCATGGATT    14280

TTGTCCCAGA GGCACCTATG ATTCAGGATA TATTGGAGGA GGTAATCATC TTTGCAAAGG    14340

AAGTGCTGCG AGATTTTAAG TAAAATTTAT TAGGAATATG AAGAAACAAG GGGAGAAAAC    14400

AGAGGATTTA ATATGAAAAA ACGAGCTATT CAAATTTTAC TAGCATTGTC CTTAATTTTT    14460

TACAAATCAA CTTGGTTTTG GAGGCTTTTC AATTATCTCG CAAAGCCCTA TCTACCAGCA    14520

AGTCGTGAAT TTTTTCAGAT TCTGCTTTTG ATGGAGAGCG GAGTTCTTTT CTTAGCGGTC    14580
```

602

```
ATCTATCTAC TGGTTTTTGC AGGAAAGAAA ATTTTTCATT TCAAGTGGCA GCTGAGGTAC          14640

TTCATCTACC TTTTACTGGG CTACATCATT TCATATATGT CTGACTTCCT CTTTTCGTAT          14700

TTCATATCCC TGTCTTCAAA TCAGATTTCT TTGAATGAAA CGGTAGAAAT GATGGGGAGA          14760

CAGGAGTTCC CTTATGTCTT GCTCATCGTT TGCTTCATCG CCCCTATTGC TGAGGAATTG          14820

ATTTATCGAG GtGTGCTTAT GACAACCTGT TGCAAAAACT CACCTTGGTA CG                  14872
```

(2) INFORMATION FOR SEQ ID NO: 73:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10223 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

```
CGTGCTATCG GTCTCAAAAC CAATCTGGTC GCTATGGTCA AATCCAGTTG GAAAATCCAT            60

TCTTCTTGGA GCCATCTGCT GGATTGCCAT CATCCTCACC ACTCTTGGTA TGCAGACCCT           120

TATCGGCATT TTCTAATACT CTTCGAAAAT CTCTTCAAAC CACGTCAACG TCGCCTTGCC           180

GTAGGTATAT GTTACTGACT TCGTCAGTTC TATCTGCAAC CTCAAAACGG TGTTTGAGCT           240

GACTTCGTCA GTTCTATCTG CAACCTCAAA ACGGTGTTTT GAGCTGACTT CGTCAGTCGT           300

ATCTACAACC TCAAAACAGT GTTTTGAGCT GACTTCGTCA GTTCTATCTG CAACCTCAAA           360

ACAGTGTTTT GAGCAGCCCG TGGCTAGTTT CCTAGTTTGC TCTTTGATTT TCATTGAGTA           420

TAACACAAAA GGTAGCCCAT CAGCTACCTT TTTCTTATGC TTCCTCAATC AAGCGAGTAT           480

GTTCTCTCTT GATACAGCGA TTCATCACGA TATCATCACA TCCACCATCA CGCAAAATCT           540

CTTTCGCTTC TAAACTTTCA AGTCCTAGCT GTGCCCAAAA AATCTTGGCA TCAGCTTTGA           600

GAAAATCACG CGCCACATCG GGCAGAAATT CACTGCGACG ATAAACATTG ACAATATCTA           660

CAGGAAAAGG AATTTCAGCG AGGCTAGCAT AAGCCTTTTC ACCCAAGATT TCGCCACCTG           720

CCGCCTTGGG ATTGACTGGG ATGATTTTAT AGCCCCGAGC CTGCATTTCC TTTGTTACTC           780

GATTGCTGGT TGTTTCTTCA CGGTCAGACA AACCCACCAC AGCAAGGGTT TTACTCGTTG           840

CGAGATACTG ACGAATCACG CCATCACTTG GATTGATAAA TTCTTGACTC ATAGAAATCC           900

TCCTTTTTCA TCAGTATAGC ACATTTTGAA AAGGTTTGCA GAATTATACT ACAAAAAAGG           960

AGGACTAGCC CCCTTTTTAT TTAGCCTCGT ACCAGGTTGC CCCTTCATTC TCATCTGCGA          1020

TAAGAGGAAC ACTGAGTTGA ATGGCTTCTT CCATGGTTTG TTTCACCAAT TTTTTCATCT          1080

CTACCAATTC AGATTTAGGC ACTTCAAGGA CGATTTCATC GTGCACTTGT AACAGCATCT          1140
```

603

```
TAGTCTGATA ACCACCTGCA ACCAAGGCTT TATCCAGCTG AATCATGGCA ATCTTGAGAA    1200

TATCTGCTGC CGAACCCTGG ATAGGTGAGT TGATAGCAGT TCGCTCCGCA AAACCACGAA    1260

TATTGAAGTT GCGCGAATTG ATATCTGGCA ACTCACGGCG ACGCTTAAAG AGGGTCTCTA    1320

CATAGCCCTT ATCACGCGCC TCCCGCACCA CTTCATCCAT GTAGTTTTTA ATACCTGGAA    1380

AACGTTCAAA GTAGGTATCA ATGTAGGCTT TGGCTTCCTT ACGACTAATT CCCAAATTAT    1440

TAGACAAGCC AAAGTCTGAA ATCCCATAAA CCACTCCAAA GTTAACTGCC TTGGCATTGC    1500

GACGGTCGTT TGCAGTCACA TCATCAGGAC GCTCAATGCC AAAGACCCGC ATGGCTGTCG    1560

AAGTATGGAT ATCTGCCCCC TCTTGGAAGG CCTTAATCAA GTGCTCATCC TTAGAAATAT    1620

GCGCCAAAAC GCGCAATTCA ATCTGTGAAT AGTCAGAGCT GAGTAGCACA CTATCCTCCC    1680

ACTCTGGCAC AAAAGCCTTC CGAATCAAGC GCCCCTGTTC CAATCGGGCA GGAATATTTT    1740

GCAAGTTTGG ATCCACACTA GACAAACGCC CGGTCTGGGT CAAATCCTGC ACATAGCGAG    1800

TATGAATCTT TCCATCAGCC AAAATCCAGT CCTGCAAGCC AATTACATAA GTAGATTGAA    1860

TCTTAGCAAT TTGACGGTAA TCCAGGATTT TCTTAACAAT CGGAGCAATA GGAGCGAGAC    1920

GCTCTAAAAC ATCCACTGCT GTCGAATAAC CTGTCTTGGT TTTCTTAGTG TATTCTAGAG    1980

GAAGTCCCAA TTTCTCAAAG AGAAGCACGC CCAACTGCTT AGGCGAGTTG ACATTAAACT    2040

CCTCACCAGC CAGCTCGTAA ATCTCTTGAG TCAGTTTTTC AATGACAAGC TCATTTTCAG    2100

CCTGCATCTC AAGCAAGGTC TCTTTCTTGA CCATAATCCC AGCAATTTCC ATCTTGGCAA    2160

GGACAAAAGC CAGAGGTTGC TCCATATCAT AAAGAAGCTC TAATTGCCCA TTTTCGCTGA    2220

GTTTTTCAAG TAAAATAGGC TCTGTTTCTA CCAAAACAGC AAGTTTACAA GCTAAGTGTT    2280

CCAAGAATTT CTCACGTTCA GGAATGGCCT TTTTAACACC CTTACCGTAG AAAGTTTCAT    2340

CATCAACCAA GTAAGTCTGA CCATAAAGAC TAGCGATGGT CGCAATTTCA TTGTCCTCCA    2400

CAGTCGAAAG GAGGTATTTA GCCAAACGGA TGTCAAAAGC AGGCGCCTGC AAATCCACAC    2460

CAAAACGTTG CAAAAGAACT TTAACCTTCT TAAAGTCATA AACTCTCAGA GATGTTTTTT    2520

CTAAGAAATC CTTGAAAATC GGGTCTTGCA ACAGCTCAAG CTTGTCTGTG GCATAGAGCT    2580

TATCCCCACA AGACCAGACA AATCCAACCA AATTATCCGT ATGGTAATTC TCACCAAAAA    2640

GCTCAAAGTG GAAGATAGAC TCTTCACTCA GCATATCTTG ACTGATTTGG TCAACAATAG    2700

TAAAATCCAA ACTCTCAGAC ACATCAGCTG ACGACACATT TAAAGCCTGC TTTAGCTGTT    2760

TGAAGCCCAT CTCATCGTAG AATTTCCCAA GATTTTCAAC ATCTGGACCA CTATAGACCA    2820

AGTCCTCTAA ACCAATCGCA ATCGGTGCCT TGGTATCAAT GGTCGCTAGT GTTTTAGACA    2880
```

604

```
AAAAGGCCTG  TTCCTTGTCA  TTGATGAGAT  TTTCCTTCAT  CTTAGAAGTC  TTCATTCCAT      2940

CAATATTTTC  ATAAATCCCC  TCAAGCGAAC  CATGCTCCAG  CAAGAGCTTA  ATACCCGTCT      3000

TTTCACCGAC  TTTGGTCACC  CCAGGGATAT  TATCCGACTT  ATCACCCATG  AGCGCCTTGA      3060

GATCGATAAA  CTGAGCTGGT  GTGAGGCCCA  TTTCTTCCAT  GAGGTAATCT  GGCCGTAAAGG     3120

CCTCAAACTC  AGCCACACCT  TTCTTGGAAA  TTTCAACCAC  CGTATGCTCA  TCCGTCAGCT      3180

GAATCAAATC  CTTGTCCCCA  CTGACAATAG  TAATATCAAA  ACCATCCTGC  TCTGCTAGCT      3240

TATCCAGCGT  CCCAATGATG  TCATCCGCCT  CATACTGAGC  CAGATCATAG  TGACGAATCC      3300

CCATATGATC  CAGCAACTCA  CGAATGAAAG  GAAATTGCTC  ACGAAACTCA  TCAGGAGTCT      3360

TGGCCCGACC  ACCCTTATAG  TCCGCATACA  TCTCTGTCCG  GAAGGTCGTC  TTTCCCGCAT      3420

CAAAAGCCAC  CAAAATATGA  CTCGGCTCAA  CCCGCTCCAA  TAAATGACTC  AACATCAACT      3480

GAAAACCATA  AATCGCATTG  GTATGCAAAC  CAGCCACATT  CTTAAAACGG  TCCAACTGCT      3540

GATACAGCGC  AAAAAACGCC  CGAAAAGCTA  CAGAAGACCC  ATCAATCAAT  AATAATTTTT      3600

TCTTATCCAT  ACACCCATTA  TAAAGGAAAG  AATCAAAAAA  TACCATTGGG  AAGAGCTAGA      3660

GCAAGTATTT  TTCAAACTTT  TTCCGAATAA  ATAGATAGAG  CCAGAGAATT  TAGTAAACCT      3720

AGATTTAAAA  ATGTGCTATA  ATATAGTATA  TTGAATCTAT  AATAGTACAC  CTTGACTGCT      3780

AAAATATTTC  TATAAATTAA  TTTGACTTTC  CTGATAGAGT  TATTCACATC  TTATTTCAAC      3840

TCACTATAGA  AGGAGGAATA  GGAGGATTCT  CAGACATCCG  GGCATCAGCC  CAACTAATGA      3900

TTTGATTGCT  AAGAAAATAT  TCAGCAATCC  AGAAATCACT  TGTCAATTTA  TTCGCGATAT      3960

GCTGGACTTG  CCAGCAAAAA  ATGTGACCAT  TTTGGAGGGA  AGCGATATTC  ACGTATTACT      4020

CTCCATGCCT  TACTCGGTGC  AGGATTTTTA  TACCAGTATA  GACGTCTTGG  CGGAGTTGGA      4080

TAACGGTACT  CAAGTAATTA  TTGAGATTCA  AGTCCATCAT  CAGAATTTTT  TCATCAATCA      4140

CTTGTGGGCT  TACCTGTGCA  GTCAGGTTAA  TCAAAATCTT  GAAAAAATTC  GTCAGCGAGA      4200

AGGTGATACT  CACTAGAGCT  ACAAACACAT  CGCTCCTGTT  TACGCCATTG  CTATCGTGGA      4260

TAGTAATTAT  TTCTCAGATG  ACCTGGCTTT  TCATAGCTTT  AGTATGCGCG  AAGACACAAC      4320

AGGTGAGGTA  TTGGCGATTA  CCAACAATGG  ACAGGAAAAC  CATCTGGTTA  AGATGGCATT      4380

CTTGGAATTA  AAAAATACAG  AGAAACCAGC  AAAGACAAGG  TTCGCAAGCC  ATGGTTGGAG      4440

TTTTTCGGCA  ACAAGCCCTT  TACCCAGCAA  CCGCAACGAG  CCATTACCCA  AGCAAATCAA      4500

CTGCTGGACT  ACAAGAGCTG  GTCCGAGGAG  GACAGGAAAA  TGTTTAGTCA  ACTACATATG      4560

CGAGAAGAAC  AAGTCTTGTT  AGCACAGGAC  TATGCCTTGG  AAACTGCTAG  GGCTGAAGGC      4620

CTTGAACAAG  GACTAGAGCG  TGGGAAAGTT  GAAGGAAGGG  CAGAAAGGAA  ACTTTTTGCC      4680
```

605

```
TTCCTAGACA TAGTACGCCA AGGTCTTCTG ACTTCTGAGG TTGCCAGCCA GCAATTAGGT    4740

ATGTCAGTAT CTGAATTTGA GGCACTGTTG TAAAATGGCT CCATAATATC CATAGTGGGT    4800

AAATCCCCTA TGGATATTAT GGAGCCTATT TTGTGTAGAA AAAAAGTCCC ATATGACCTA    4860

TAATGAAAAG CGACAAAACA ACTCATTAGA AAGAATCATA TGGAACAATT ACATTTTATC    4920

ACAAAATTAC TAGACATTAA AGACCCTAAT GTCCAGATTT TAAACATCAT CAATAAGGAT    4980

ACACACAAGG AAATCATCGC CAAACTGGAC TACGACGCCC CATCTTGCCC TGAGTGCGGA    5040

AACCAATTGA AGAAATATGA CTTTCAAAAA CCTTCTAAAA TTCCTTATCT TGAAACGACT    5100

GGTATGCCTA CAAGAATTCT CCTTAGAAAG CGTCGATTCA AGTGCTATCA CTGTTCAAAA    5160

ATGATGGTCG CTGAAACTTC TGATGACGTA CAGTCATATT TCTTCTCTTT TTATTATATC    5220

ACAGTTTTAA ATCTAGCTTT ACTAGATTCA CCGCTACTAT CTATTTATTC GGAAAAAAGA    5280

CGAAAAAACC TGAGAATCAT CTCAGGCTTG GTCATTAAAT TTTTTTCTCA ATATCGAAAA    5340

GTGGAGAAAG TGGTCGTTTT TCATGAATAC GTACGATAGC ATCCCCTAGG AGATGAGCGA    5400

TTGAAATCTG CTCAATCTTA TCAATCAAAC GCTCTTCTGG CAGATAGATG GTATCCAAAA    5460

CAACCAATTT CTTAATAGCT GATTTTTGGA TATTGTCCGT AGCAGGACCA GAAAGAACTG    5520

GGTGCGTACA GCTTGCATAG ACTTCAACAG CACCAGCTTC CGCAAGAGCA TCTGCCGCAT    5580

GACAAATCGT TCCAGCGGTA TCAATCATAT CATCAATCAA GATACAAGTC TTGCCTTCAA    5640

CCTTACCGAT GATATTCATA ACTTCACTAG TATTCATCTT ATCAACGCTA CGACGTTTAT    5700

CAATAATAGC GATAGATGTT TTCAAAAATT CTGCCAACTT ACGAGCACGA GTCACCCCTC    5760

CATGGTCCGG GCTGACAACC ACATAGTCAG AACCAACCAT ACCACGACGC TCAAAATAAT    5820

CTGCAATCAG AGGAGCACCC ATCAAATGAT CCACAGGAAT ATCAAAGAAT CCTTGAATTT    5880

GCGCAGCATG CAAGTCGATG GTCAATAAAC GATCCACTCC AGCTACTTCA AGCATATTTG    5940

CGACAAGTTT TGAAGTGATT GGCTCACGCG CTCTCGCCTT TCTATCCTGA CGTGCATACC    6000

CATAGTAAGG CATGACAACA TTGACAGATT CTGCACTCGC ACGCTTCAAA GCATCTACCA    6060

TAATCAAAAT TTCAAGCAGA TTGTCATTTA CAGGCGAACT AGTTGATTGT AAGATAAAGA    6120

CGTGTTTCCC ACGGATTGAT TCTTCAATGT TGACCTGAAT CTCTCCATCT GAAAATTGGC    6180

GAACACTTGA TTTCCCCAAC TCTATCCCAA TCTCCTGCGC CACACGTTCT GCCAATTCTT    6240

TATTAGAAGA AAGGGCAAAC AGCTTTAAAT CAGAAAAAGA CATGATTTCC TCCGGTATAT    6300

ATGTATAACT TGTGCTTTTC ACAAGATTTT CCATCTACCA TTGTAGCGCT TTTTGCACTA    6360

TTTTTCAATC AAAAATAAAA GAAGGGCACC ATATTTGTAC CCTTGCATCA TTCTTTTGAA    6420
```

606

```
AAATATTCTA GGTCATCAAC TCATTGTGTT TCTCAACAAA GCAATAAGCA TGATAAAAAC        6480

CATAGAGAGC AATAGCCGTA ACCACTGGAA TCGCTAAAGG CAACTCTGTT TCCAACTCCA        6540

CAAAAGGAGA GTTAAACAAG AAGTGAGTTC CCAAGGCTAA ACCTAGAAAA ATAAGGCCCT        6600

GTTTCTTGCC AACCTTCTGT CCTTTATAGG CTCTGTAAAG CAAGTAAACA CCTACTACAG        6660

CTAGACCTGA AAAAGTCCAG TGAGAGGCAA TTCCTGAGAT GATACGCTCT AAAATTCGCG        6720

AAATAGTAAA GTCAAAGCCC TCTGGCAAAT CCGTACGAAT ATAACCAATA TCCTTAATCA        6780

TTTGGAATCC CAAACCGGAA GCAATTCCAA GTAAAAACAA AGATTTTAAT TTTCGCACAG        6840

GAATCAAAGC CAAAACAAAA ACAAGTGACA ATAATTTCAA GGGTTCTTCT ACCAAAGGAG        6900

CCGCAATAGC ACTTTCAAAG GCATTTAAAA ATGGACTATC TGGGAAAAGA ACCCCCAGTA        6960

AATCATGGAT ATAAGTATTA GCAAAACTAG ACAACCAGCC TGAAAGGAAC ATCCCTCCCA        7020

ATAAAGACAG AATCAAAACC TTCTTTGGCA ATTCCCATTT TTCCCAATAC GGAAGAGAAA        7080

ATAAAGAGCC GGAATCATGT AAAAGAGAGC TAGAAAGATA GAAACTCCCA TTAGTCCATA        7140

TTCCGCACCT GACCTCGAAC CGTCCGTATA GTAGATGGTT TCATACTGTA AACCAATACA        7200

TAGCAATAAA ATAAAAATAA ATAAAATATT GCTTTTCTTC ATACACTTTC TTTCTAAATG        7260

AAGTATTTAT AATTCTACGA CTGTCATACT TCCTGTATCA ACATTGTAAA TGGCACCAGA        7320

GATAATGACA TCGTCTGGTA TTAGGGGAGA CTCGATAAGC AGTTGCATAT CCTCGCGTAC        7380

ACTCTCTTCT ATATCTTGGA AGGGCAAGAA GTCCTGGTCT GACACATCGA CACCCAATTC        7440

TTCCTTCAAA TACTCCTGAA AAGGTTCATT TTCAAAGGTC TGAGCACCAC AGTCTGTATG        7500

ATGCAATACC ACAATTTCTC TTGTCCCCAT TTGTTGCTGG GAAATAACTA GAGAACGAAT        7560

CATATCCTCA GTCACTCGAC CACCTGCATT CCGCAAAATA TGAGCATCCC CAAGTGCCAA        7620

ACCTAGAGCT TGCGCAACGT GCAAACGTGA GTCCATACAG GTCACAATGG CTACTCTGGT        7680

TTTAGGTTTA AGTGGCAGAT TTAACTGCCC ATGTAGGGCA ACATAAGCCT GATTGGCTTG        7740

CATAAACTGT TCAAAATACG ACACGATTCC CTCCTTGAAA ATTTGATAGT CAAATATTTC        7800

TCCTATCTTA TCATTTTTAA GAGAATTTGT CACGGATTAT GCAAAGACCT TTTTCAAGAC        7860

TTCCTGAATC GTTGTCACGC CAATGACCTG AATTTCCTTA GGCAGAGTGA TTCCTGTCAA        7920

GGAATTCTTA GGTACATAAA TCTTAGTAAA GCCCAGTTTA GCAGCTTCGT TGATGCGTTG        7980

CTCAATACGA TTCACGCGCC GAATCTCTCC TGTCAAGCCC AGTTCTCCGA CAAAACATTC        8040

CTGAGGATTA GTTGGCTTGT CTTTGTAGCT CGAAGCAATA GCAACTGCAA CAGCCAAGTC        8100

AATCGCAGGT TCATCCAATT TAACACCACC AGCAGATTTG AGATAGGCAT CCTGATTTTG        8160

CAAGAGAAGC CCTGCCCGTT TTTCCAAAAC AGCCATAATC AAGCTAGCAC GGTTAAAATC        8220
```

607

```
AAGTCCTGTC GTAGTACGCT TGGCATTTCC AAACATGGTC GGTGTTACCA AAGCCTGAAC    8280

CTCCGCCAAA ATCGGACGCG TCCCTTCCAT GGTTACAACG ATGGAGGAAC CAGTCGCCCC    8340

ATCCAAACGC TCTTCTAGGA AAACTTGACT CGGATTGAGT ACCTCAACCA AGCCGCCCGA    8400

CTGCATCTCA AAAATCCCAA TCTCATTAGT GGAACCAAAA CGATTTTTGA CCGCTCTCAA    8460

AATACGAAAG GTGTGGTGAC GCTCCCCTTC AAAGTAAAGC ACCGTATCCA CCATATGCTC    8520

CAACATACGA GGCCCAGCCA AGGTTCCTTC TTTGGTCACA TGACCTACGA TAAAGATGGC    8580

AATGTTATTG GTCTTGGCCA ACTGCATGAG TTCAGCGGTC ACTTCACGCA CCTGAGAAAC    8640

AGACCCCTGC ACCCCTGAAA TCTCAGGAGA CATGATGGTC TGGATGGAAT CAATAATGAG    8700

AAAGTCTGGC TGGATACGCT CCACTTCTGC ACGAACACTC TGCATATTGG TCTCTGCATA    8760

GAGATAAAAC TCACTATCAA TATCACCTAA GCGCTCTGCA CGTAGTTTAA TCTGCTGGGC    8820

AGACTCCTCC CCACTGACAT AGAGAACTGT CCCCACTTGG GACAACTGGG TTGAGACTTG    8880

TAGGAGAAGA GTTGATTTCC CAATCCCAGG ATCCCCACCG ATAAGGACGA GACTTCCTGG    8940

TACCACTCCG CCTCCAAGCA CACGGTTGAA TTCCTCCATC TCCGTCTTGG TTCGATTGAC    9000

ATTGATGGAA GTCACCTCAG CTAGTTTCAT GGGCTTGGTT TTCTCACCTG TCAAGGACAC    9060

ACGCGCATTC TTAACTTCGG CAACCTCAAC CTCTTCCACA AAAGAAGACC AAGACCCACA    9120

GTTGGGGCAA CGTCCCAGAT ATTTAGGGGA ATTATACCCA CAATTTTGAC ATACAAATGT    9180

CGCTTTTTTC TTTGCGATGA CAAACCTCTT TCTATATCTC TAACTCACAC TCAATCACTT    9240

GGCAAAAATC AATCTTCTCA TTTGGCACAA ACTGGCGCAT GAGCATTCGA TGAGCAACAA    9300

CTACCACAGT CTGATGTTCT CGATACTTAG ACATACATTC TAGAAACCGA GACTTCATTT    9360

CCGTAGCTGT CTCATATTGA ATAGGACTAT TAGGAAGCAA CTCCCCCTTG TTTTCTAAAA    9420

ACAGTCTTCT AGCTGTTTCA AAGTTTTCTA TTCCTGTTTT ATAGACCTGC CATTCATGTA    9480

ATAAAGGCTC TACTCTTAAA GGAAGACCCG TAGCACAGAC CACATACGAA GCCGTTTCTA    9540

AAGCTCTTGT GACTGCAGAA GATACGATTA TTTCAGCTGA CGAGAGTAAA GGATTTTTGC    9600

TCAATTTCTG GACTTGCTGC CGTCCCATCT CAGACAAGGG TGCCAAATCT ATCCCAAATC    9660

CTATATAAGA ACGCTCCTCT AACTCACGGT AATCTGGCTC CCCATGACGT ACAAAGATAA    9720

TCTTCATTCT AGTGCCCTGT CGATCCAAAT CCACCAGTTC GAACGCCATC AGCTGCATCT    9780

CCATCTGCAA TTAAGAAAGT AGCAAAAACA GCCTGGACAA TACGCTCCCC AACTTCAAGA    9840

ACAACCTCTT GGTCTGTGAT ATTCTTCATC TGCGCAAAAA TATGCCCTTC ATTTCCAGGA    9900

TTTCCATAAT AATCCCCATC AATGACTCCA ACTGAGTTAA TTAAAACCAA GCCCTTCTTA    9960
```

```
CGAGGATTTG AAGAACGATC ATAGAGGTAG AGAACCTCAG TCGGCTGCAT ATAAGCCTTA        10020

ACCCCTGTCG GAACCAAGAC AATCTCTCCT GGCGCAACAA CTGTACGCAC AGCAACCTTT        10080

AAGTCGTAAC CAGTCGCATG CGCTGTCTCA CGCTTGGGCA ATAAATTTTC ATCTGTAAAA        10140

CTCGAAACCA ATTCAAAACC ACGAATTTTC ATAATTTTCT CTTTTCTATT ATCATTTATT        10200

CTAGATTATT CTATACTTAT TTA                                                10223
```

(2) INFORMATION FOR SEQ ID NO: 74:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 16535 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

```
TGGTTCTGTC CTTATCGGCG CCTTGTCTTG CTTGCCATGG CTACACCAAC TATCTCATCC          60

GACGAAAGTA CACCAACCAC TAACGAACCC AACAACAGAA ATACAACCAC CCTTGCCCAA         120

CCTCTTACTG ATACAGCAGC TGGCTCTGGT AAGAACGAAA GTGATATTTC TTCACCTGGA         180

AATGCAAACG CTTCCCTAGA GAAAACAGAA GAAAAACCTG CTGCAAGCCC AGCCGATCCA         240

GCACCACAAA CTGGACAAGA TCGTTCAAGT GAGCCAACTA CTTCTACTAG TCCAGTAACA         300

ACTGAAACTA AGGCAGAAGA GCCCATCGAA GATAACTACT TCCGTATCCA TGTCAAAAAA         360

CTTCCTGAAG AAAACAAGGA TGCTCAAGGA CTATGGACTT GGGACGATGT TGAAAAACCA         420

TCTGAAAACT GGCCAAACGG AGCTTTGTCC TTCAAGGATG CCAAGAAAGA TGACTACGGC         480

TATTACCTAG ATGTCAAATT AAAGGGAGAA CAAGCCAAGA AAATTAGCTT CCTCATCAAC         540

AATACAGCTG GAAAAAATCT AACCGGCGAT AAATCTGTAG AAAAACTAGT TCCAAAAATG         600

AACGAAGCTT GGTTAGACCA AGATTACAAG GTTTTCTCTT ACGAGCCACA GCCTGCAGGA         660

ACTGTTCGCG TCAACTACTA CCGCACAGAT GGCAACTATG ACAAGAAATC TCTCTGGTAC         720

TGGGGAGATG TGAAAAATCC AAGTAGCGCT CAATGGCCTG ACGGAACAGA CTTTACGGCT         780

ACAGGCAAAT ATGGCCGCTA TATCGACATT CCTCTTAATG AAGCCGCAAG AGAATTTGGA         840

TTTTTATTAC TAGATGAGAG CAAACAAGGA GACGACGTGA AAATCCGTAA AGAAAATTAT         900

AAGTTCACAG ATTTGAAAAA TCATAGCCAA ATTTTCCTAA AAGACGATGA TGAATCGATT         960

TACACAAATC CATACTATGT CCATGATATC CGTATGACAG GAGCCCAACA CGTAGGCACT        1020

TCTAGCATTG AAAGTAGCTT TTCAACACTT GTCGGTGCTA AAAAGAAGA TATCCTCAAA        1080

CACTCCAACA TCACTAATCA CCTAGGAAAC AAGGTAACTA TTACCGATGT TGCAATCGAT        1140
```

609

```
GAAGCTGGTA AGAAAGTGAC CTACAGCGGA GATTTCTCTG ACACAAAACA TCCTTATACT        1200

GTTAGCTACA ATTCCGACCA ATTCACTACC AAAACAAGCT GGCGCCTGAA AGATGAGACA        1260

TACAGCTATG ATGGCAAACT GGGAGCTGAC CTAAAAGAAG AAGGAAAACA AGTTGATTTG        1320

ACCCTTTGGT CACCAAGTGC TGATAAGGTT TCTGTTGTTG TCTACGACAA GAATGACCCT        1380

GACAAAGTAG TTGGAACTGT CGCTCTTGAA AAAGGGGAAA GAGGAACTTG GAAACAAACT        1440

CTAGACAGCA CAAACAAACT CGGAATCACA GATTTCACTG GCTACTATTA TCAATACCAA        1500

ATCGAGCGTC AAGGTAAAAC TGTTCTTGCA CTCGATCCTT ACGCTAAATC TCTTGCTGCT        1560

TGGAATAGCG ACGATTCCAA GATTGACGAT GCCCATAAAG TGGCTAAAGC CGCCTTTGTA        1620

GATCCAGCTA AACTCGGACC TCAAGACTTG ACTTATGGTA AGATTCACAA TTTTCAAGACT       1680

CGTGAAGACG CCGTTATCTA CGAAGCTCAT GTGCGTGATT TCACTTCAGA TCCTGCCATT        1740

GCAAAAGACT TGACCAAACC ATTTGGGACT TTTGAAGCCT TCATTGAAAA ACTAGACTAT       1800

CTCAAAGACT TGGGTGTAAC CCATATCCAG CTCCTTCCAG TCTTGTCTTA CTACTTTGTC       1860

AATGAATTGA AAAACCATGA ACGCTTGTCT GACTACGCTT CAAGCAACAG CAACTACAAC        1920

TGGGGATATG ACCCTCAAAA CTACTTCTCC TTGACTGGTA TGTACTCAAG CGATCCTAAG        1980

AATCCAGAAA AACGAATCGC AGAATTTAAA AACCTCATCA ACGAAATCCA CAAACGTGGT        2040

ATGGGAGCTA TCCTAGATGT CGTTTATAAC CACACAGCCA AAGTCGATCT CTTTGAAGAT       2100

TTGGAACCAA ACTACTACCA CTTTATGGAT GCCGATGGCA CACCTCGAAC TAGCTTTGGT        2160

GGTGGACGCT TGGGGACAAC CCACCATATG ACCAAACGGC TCCTAATTGA CTCTATCAAA        2220

TACCTAGTTG ATACCTACAA AGTGGATGGC TTCCGTTTCG ATATGATGGG AGACCATGAC        2280

GCCGCTTCTA TCGAAGAAGC TTACAAGGCT GCACGCGCCC TCAATCCAAA CCTCATCATG        2340

CTTGGTGAAG GTTGGAGAAC CTATGCCGGT GATGAAAACA TGCCTACTAA AGCTGCTGAC        2400

CAAGATTGGA TGAAACATAC CGATACTGTC GCTGTCTTTT CAGATGACAT CCGTAACAAC        2460

CTCAAATCTG GTTATCCAAA CGAAGGTCAA CCTGCCTTTA TCACAGGTGG CAAGCGTGAT        2520

GTCAACACCA TCTTTAAAAA TCTCATTGCT CAACCAACTA ACTTTGAAGC TGACAGCCCT        2580

GGAGATGTCA TCCAATACAT CGCAGCCCAT GATAACTTGA CCCTCTTTGA CATCATTGCC        2640

CAGTCTATCA AAAAAGACCC AAGCAAGGCT GAGAACTATG CTGAAATCCA CCGTCGTTTA        2700

CGACTTGGAA ATCTCATGGT CTTGACAGCT CAAGGAACTC CATTTATCCA CTCCGGTCAG        2760

GAATATGGAC GTACTAAACA ATTCCGTGAC CCAGCCTACA AGACTCCAGT AGCAGAGGAT        2820

AAGGTTCCAA ACAAATCTCA CTTGTTGCGT GATAAGGACG GCAACCCATT TGACTATCCT        2880
```

610

```
TACTTCATCC ATGACTCTTA CGATTCTAGT GATGCAGTCA ACAAGTTTGA CTGGACTAAG     2940

GCTACAGATG GTAAAGCTTA TCCTGAAAAT GTCAAGAGCC GTGACTATAT GAAAGGTTTG     3000

ATTGCCCTTC GTCAATCTAC AGATGCCTTC CGACTTAAGA GTCTTCAAGA TATCAAAGAC     3060

CGTGTCCACC TCATCACTGT CCCAGGCCAA AATGGTGTGG AAAAAGAGGA TGTAGTGATT     3120

GGCTACCAAA TCACTGCTCC AAACGGCGAT ATCTACGCAG TCTTTGTCAA TGCGGATGAA     3180

AAAGCTCGCG AATTTAATTT GGGAACTGCC TTTGCACATC TAAGAAATGC GGAAGTTTTG     3240

GCAGATGAAA ACCAAGCAGG ACCAGTCGGA ATTGCCAACC CGAAAGGACT TGAATGGACT     3300

GAAAAAGGCT TGAAATTGAA TGCCCTTACA GCTACTGTTC TTCGAGTCTC TCAAAATGGA     3360

ACTAGCCATG AGTCAACTGC AGAAGAGAAA CCAGACTCAA CCCCTTCCAA GCCTGAACAT     3420

CAAAATGAAG CTTCTCACCC TGCACATCAA GACCCAGCTC CAGAAGCTAG ACCTGATTCT     3480

ACTAAACCAG ATGCCAAAGT AGCTGATGCG GAAAATAAAC CTAGCCAAGC TACAGCTGAT     3540

TCACAAGCTG AACAACCAGC ACAAGAAGCA CAAGCATCAT CTGTAAAAGA AGCGGTTCGA     3600

AACGAATCGG TAGAAAACTC TAGCAAGGAA AATATACCTG CAACCCCAGA TAAACAAGCT     3660

GAACTTCCAA ATACAGGAAT CAAAAACGAA AACAAACTCC TATTTGCAGG AATCAGCCTC     3720

CTTGCGCTCC TTGGTCTCGG TTTCTTACTA AAAAATAAAA AAGAGAACTA AACTAGCCCT     3780

CCTATAGAAA AATCCCCCAA GCATTATAGC TCGGGGGATT AATTTTTGTA CAATATTTGT     3840

TGTCCTAATA AACTTGATTA GGATTTTTTA TTAAGCCTCT TTCATAGCAA AATAAGCTCG     3900

TACTTTGGGT GCAACTTGTG TTCCGAAGAG TTCAATAGCT CTCAGAACCT GGTCATGAGG     3960

CATAGAACCA AGCGGTAGAT GAAGCATGAA GCGGTCCAAT CCTAAATCCT CTATCATGCG     4020

AATCAATTTT TCGGCCACCT GATCTGGATT GCCAACAAAC ATGGCGCCAT TTGGCCCTAC     4080

CTGCTCCAAA TATTGCTCAT AACGCAATTC CTGCCAGTGC GGACGGTCTT TGGAAATAGC     4140

ATCCACCACT TGCTTAGTCG GATGGAAATA ATCTTTCACC GCCTGCTCAC CATCTTCCGC     4200

AATCCACCCC CAAGAATGGG CTCCCACTTT CAAGTCTTTG TCAGCATGGC CCCTTCGCTT     4260

CCAATCTCAC GATAAGCCTG AATCAACTTT TTAAAATAAC GTGGATTACC ACCAATAATA     4320

GCATATACAA TCGGTAGACC AGCCTGAGCA ATCTTCACTG TTGATTCGAC ATGACCACCT     4380

GTAGCTATCC ACAAGGGCAA TTTGTCCTGA ACTGGACGAG GATAAACTTC TTTACCAGCA     4440

ATCGTTTGAG TCAATCGACC TTGCCAGTCT AACTTGGTCT TTTCATTGAC TAACTGAAGC     4500

AAGTCTAATT TCTCATCAAA AAGAGAGTCG TAGTCTTTCA AGTCATAACC AAACAGAGGG     4560

AAAGATTCCG TGAAAGAGCC CCTTCCAGCC ATAATCTCCG ATCGTCCATT TGACAAAGCA     4620

TCGATAGTGG CATACTGTTG GAACAAACGA ATCGGGTCCA TGCTTGACAG AATGCTGACT     4680
```

611

```
GCACTGGTCA AACGGATTTT CTTGGTATTG ACTGCCCCAG CGGCCAGAAC AATCTCTGGG    4740

GCTGATACTG CAAAATCCGC CCGATGGTGC TCACCAATCC CATATACATC CAAACCAACC    4800

TTGTCAGCCA GCTCAATCTC TGCCACCAAC TGGCGAATGC GTTCAGCATG ACTGTAAGTT    4860

TGTCCAGTCC CTTCAAGCTC CGTTATTTCC CCAAATGTTG AAATTCCCAA TTCTACCATT    4920

GTGATTCTCC TTATCTATCT CTGTACTTCA ATTTGAAAAA TTATTCTAAC ACGAATCTTG    4980

AGTACAAGCA ACCGATTTGC TCATTAGAAA AAGCCTAGAT AACTAGACTT TTTTAGCTTA    5040

TTCTACCGTT ACTGACTTGG CAAGGTTACG TGGTTTGTCC ACATCGAGGC CACGGTGGAG    5100

GGTTGCAAAG TAAGCGACTA ATTGCGTTGG TACGACCATT GAAATTGGTG AGAGGTATGG    5160

ATGTACGGTC GTAAGGACGA TATCGTCGGT ATCTTTGGCT ACATTCTCTT CTGCGATAGT    5220

GAGGACTTTG GCACCACGGG CTGCGACCTC TTGGATATTT CCACGAGTAT GATTGGCAAG    5280

AACTGGATCT GACAAGAGAG CCAAAACAGG CGTTCCTTCT TCAATCAAGG CAATGGTTCC    5340

GTGCTTGAGT TCTCCTGCAG CAAAGCCTTC ACACTGGATA TAAGAAATCT CTTTGAGTTT    5400

GAGACTTGCT TCCATGGCTA CGTAGTAATC TTGACCACGT CCGATGTAAA AGGCGTTACG    5460

AGTTGTTTCA AGAAGTTCAC GAACCTTGAC TTCAATGGTT TCTTTCTCTG AAAGAGTTGA    5520

TTCGATAGAC TGAGCTACGA TTGACAATTC ATGAACCAGG TCAAAGGCTT GCGCTTTAGC    5580

ATTACCATTT GCTTCTCCGA CTGCTTTTGC AAGGAAGGCA AGGGCTGCGA TTTGCGCTGT    5640

ATAGGCTTTA GTTGATGCCA CGGCAATTTC AGGACCTGCG TGAAGGAGCA TGGTATAGTT    5700

GGCTTCACGT GAGAGGGTTG AACCTGGAAC GTTTGTCACT GTTAAGCTTG GAATTCCCAT    5760

TTCATTAGCC TTGACCAAAA CTTGACGACT ATCCGCTGTT TCACCAGATT GGCTGATAAA    5820

GATGAAGAGT GGTTTCTTGC TGAGAAGTGG CATACCGTAG CCCCACTCAG ATGAGATTCC    5880

AAGTTCAACT GGTGTATCTG TCAATTCTTC CAACATTTTC TTAGAAGCAA ATCCTGCATG    5940

GTAAGATGTT CCAGCTGCAA GGATGTAGAT GCGGTCTGCG TCTTGAACAG CCTTAATGAT    6000

ATCTGGGTCT ACGACAACTT GACCAGCCTC ATCTGTGTAG GCTTGGATGA GTTTCCGCAT    6060

AACAGTTGGT TGCTCGTCAA TTTCCTTGAG CATGTAGTAA GGGTAAGTTC CCTTACCGAT    6120

ATCTGACAAG TCAAGTTCAG CAGTGTAGCT AGCACGCTCA CGACGATTTC CATCATAGTC    6180

TTGAACTTCC ACACTATCAG CCTTGACGAT TACCAACTCT TGGTCATGGA TTTCCATGTA    6240

TTGGTTAGTT TCACGAATCA TAGCCATGGC GTCTGAGCAG ACCATGTTAT AGCCTTCTCC    6300

AAGACCAATC AAAAGTGGTG ATTTATTTTT AGCTACGTAG ATGACTTCAG GATCTTGTGA    6360

GTCAACCAAG GCAAAGGCAT AAGAACCACG GATGATGTGA AGGGCTTTTT TGAAGGCTTC    6420
```

612

```
AAGAACTGAG AGCCCTTCTT CTTCCGCAAA TTTTCCAATC AAATGAACGG CTATTTCAGT      6480

ATCTGTCTGC CCCTTGAAGT GGTGACCTGC AAGGTATTCT TCCTTGATTT CAAGATAGTT      6540

CTCAATCACC CCATTATGCA CCAAGACAAA ACGTTCCGTC TCAGAGCGGT GTGGGTGAGC      6600

ATTGTCCTCA GTTGGTTTTC CGTGAGTAGC CCAACGAGTA TGTCCGATAC CAGTTGTTCC      6660

CTCAACACCA GCTGTCTTGG CAGACAATTC TGCAATACGA CCAACCGCCT TCACCAAATG      6720

GTTATCAGCA CCATCTAGGA CAAAAATTCC CGCAGAATCA TAGCCACGGT ATTCAAGCTT      6780

TTCAAGCCCT TGAATCAAAA TATCAGTTGC ATTTGTGTTT CCAACAACAC CAACAATTCC      6840

ACACATAGTA TATACGACAC AGGCAAGCTG TGCTTTCTCC TTAAAATTGG TATAGTCTAA      6900

TTCATCTTTT ATAGAATCAG CAAAAACAGT ATATACTTGT TTCTTTCACT TGTCAAGAGT      6960

AAAAATTGGT ATAGTTCAAA TTAAGCTCCT GTAAGCATAA AAACTCTGAC CGATTGGGAT      7020

AATCAGTCAG AGTCCTTTTT AAAATCCATT ATTATCGCTT AATTCTTTGA ACCAGTGGCC      7080

TGATTTCTTC AGACGACGTT CTTGCGTTTC CAAGTCTAAT TCGACCAAAC CATAGCGATT      7140

TTTATAGCTG TTGAGCCATG ACCAGCAGTC AATAAAGGTC CAAATCAAGT AGCCCTTACA      7200

GTTGGCACCA TCTTCAATGG CACGGTGAAG TTCACGAAGA TGACCTTTTA CAAAGTCAAT      7260

ACGGTAATCA TCTTGAATCA TTCCATCTTG ACGGAATTTT TCTTCCCCTT CAACACCCAT      7320

ACCATTCTCA GTCAACATCC ACTCAATATT GCCATAATTT TCCTTGATAT TTTGGGCGAT      7380

GTCATAAATC CCTTGCTCAT AAATCTCCCA ACCACGGTGA GAATTGATTT TACGTCCAGG      7440

CATCACATAA GGCTCGTAAA AATGTTCTGG TAAGAGTGGA CTCTCTGGAT GCTTAGCAAA      7500

TCGAGGAGCC ATAACACGCA AAGGTTGATA GTAGTTCACA CCAAGGAAGT CCACCGTATT      7560

ATCACGAATG AGTTCCAACT CTTCCTCTGT AGCATCAGGA AAAAGACCGT GTTCATGCAA      7620

GATTTCTACC AACTCCTGTG GATAAGTCCC CAAGACAGAT GGATCTAAGA AAGATTGGGC      7680

CTGAAAAAGG GCCGCAATAC GAGCTGCCTT GACATCAGCA GGATGCTGGC TACGTGGATA      7740

AGCCGGTGTC AAGTTGAGGA CAATCCCAAT CTTGGAATCA GGCAAAAGTT CATGGCAAGC      7800

CTTAACAGCC CGGCTGCTGG CCAATTGTGT ATGATAGGCT ACCTTAACAG CTGCCTCTGC      7860

ATCCACCTTA TGTGGATAAT GGGCATCATA AAAATAACCA AATTCTACAG GAACGATGGG      7920

CTCGTTAAAG GTAATCCATT GATCCACTAA ATCTCCATAA GTCTCAAAAC AAAAACGAGC      7980

ATAGTCTTCA TAGGCTGAGA CTGTCGCCTT ATTTTCCCAA CCATCACCAT CCTCTTGAAG      8040

GGCAAAAGGT AAATCAAAAT GATAGAGATT GACTAACAGA CGAATTCCTT TAGCCTTAAT      8100

AGCCTCAAAG ACCTTACGAT AAAAATCCAC ACCTTGAGTG TTGACTTTTC CACAGCCTTG      8160

TGGAAAAATC CGTGACCACT GAATAGAAGT CCGAAAGGCT GTGTGACCAG TCTCTAACAA      8220
```

613

```
AAGCTCAATA TCCCGCTCCC AATTTTCATA AAAAGTCGAT GTCTTATCTG AACCAATCCC    8280

ATTATAGTAA CGATTTGGCT CCACTTGGAA CCAGTAATCC CAGAGATTGT CTCCCTTACC    8340

GTCACCAGCT ACACGTCCTT CTGTCTGCGG TCCAGAAGTA GAGGATCCCC AGACAAAATC    8400

CTTTGGAAAT CTTAGCATAC ATTTACCTCT TTATCTACTC ATTTCTCCCA TTATACAGAA    8460

AAAACAAGGT AAAAACTAGT TACATTTTTT CCTTGTTTTT CTTCTGATTA TAGTTTTTAT    8520

TTCTTGCTTA GGATTTCAAG CGTTTCAAGC ACGTTATCTG CATGAACCTC AATGGTGTCA    8580

CCAGTTGCCT TGATCTTAAC TTCTACAATG CCATCGGCCG CTTTTTTACC AACAGTGATA    8640

CGGATTGGAA GACCAATCAA GTCACTATCG CTAAATTTAA CACCGACACG TTCGTTACGG    8700

TCATCTGTCA AGACTTCATA ACCAGCTCCC ATCAAGCTTG CTTCAAGTTT TTCTGTCAAG    8760

GCTTGCGCTT CTTCATCCTT GACATTGACA GTAATCAAAT GCACATCAAA TGGTGCCAAT    8820

TCTTTAGGGA AATTGATTCC CCAAGCGTAA CGGTATTCAC CTTTTGGCGT TTTGTTAACA    8880

AAGAGGCGAG CGTGTTGCTC CATCACTGCT GAAAGAAGAC GGCTGACACC GATACCGTAA    8940

CATCCCATGA TGATTGGCAC AGCACGACCA TTTTCATCCA AGACATCTGC TCCCATGCTT    9000

GCTGAATAGC GAGTTCCGAG TTTGAAAATA TGACCGATCT CAATACCACG CGCAAAGTTA    9060

AGGACACCTT GTCCATCTGG GGAAATTTCA CCCTCACGAA CTTCACGGAT ATCCACATAT    9120

TCTGCAGTAA AATCACGGCC TGGGTTCACA CCAGTCAAGT GGTAGTCATC TTCGTTAGCA    9180

CCGACAACTG CATTCCCAAC ATCTTGTACC TTACGATCTG CAATAATTTT AATATTCTCT    9240

GGCAAACCAA CTGGTCCAAG TGAACCAAAT CCTGCTTGAA CAACATTCGC CACTTCTTCT    9300

TCGCTAGCAA CGTCAAAGAA ATCTGCTCCC AAGTGATTTT TCAACTTGAC TTCGTTGAGT    9360

TGGTCATTTC CAACTAGAAG GGCTGCAACA AGCTCACCAT CTGCAATGTA GAAGAGGGTT    9420

TTAATCGTTT GTTCTTCTGG AACATTGAGG AAGGCTGCAA CTTCATCAAT TGATTTAACA    9480

TCTGGCGTTG CAACACGAGT AACTTCTTCT TCAGCGACAA CACGGTTGCT TGGTTTGTAC    9540

TCGTTTGTTG CCATTTCTAA GTTAGCTGCA TAGCTAGACT CACTTGAGTA AGCAATGGTA    9600

TCTTCACCAG AGACTATCCA TTTGAGCAAT TCTGCCTTGA TTTCTTCTTG CACTTCTGCA    9660

GGAATTTCGT CAAATGAGGC AACTGACTTG TCCAAGACAA CCCAGCGGTC AAGGTCTGTA    9720

CGAGCAGATG TAATGGCCAT AAATTCTTGG CTATCCTTAC CACCCATGGC TCCACCGTCA    9780

CCAATAATAG CCTTGAAGTC TAAACCACTA CGAGTGAAAA TACGCTCATA GGCTGCTTTG    9840

TACTCATCAT AAACACTATC CAAACTATCA TAGTTAGCGT GGAAACTATA AGCATCCTTC    9900

ATGATAAACT CACGTGTACG AAGAAGTCCA TTACGCGGGC GTTTTTCATC ACGATACTTG    9960
```

614

```
GGCTGAATTT GATAAAGGTT GAGTGGCAAT TGCTTGTAAG ATTTAACAGA ATCACGGACA      10020

ATAGCTGTAA AGGTTTCTTC GTGAGTTGGA CCTAAGATAA AGTCTGATTT TTCACGGTTT      10080

TTTAGTTTGT AAAGGTCTTC ACCATAGGTT TCGTAACGAC CTGATTCACG CCACAATTCT      10140

GCACTAAGAA GGGCTGGAGC CAACATCTCA ACAGCACCAA TCTTTTCGAA TTCTTGGCGC      10200

ATGATGTTTT TAGCTTTTTC AATCACACGG TTGGCAAGTG GTAGATAAGA ATAAACACCT      10260

GCTGAAACTT GGCGAACATA ACCAGCACGC AACATAAGAG CATGGCTGAT AACTTGAGCA      10320

TCGCTTGGCA TTTCGCGAAG CGTTGGGATA GGCATTTTAC TTTGTTTCAT AATATTCCTC      10380

GATTATCTAA AAAAGAGTCG CATAATGTCA TTCCAAGTCA CAGCAATCAT CAAGACAACC      10440

ATGATGACCA CTCCGGCCAA GGTGACATAG GTTTCAATTT CTTGTTTCAA TGGTTTGCGG      10500

CGGATGGCTT CTAGGATATT GAGCACAATC TTACCACCAT CCAAGGCTGG AATCGGAATA      10560

AGATTAAAAA TCCCAATATT GATGGAAATC ATTGCCAAGA AGTACAAGAT ATTTTCAATT      10620

CCATTTTTAG CAGCATCACT ACTTGCCTTA AAGATAGCAA CAGGTCCACC CAACTTGTTC      10680

AAATCTGGTT GGAAAATCAG ATTTTTCAGA GCTGAGAGAA TTCGGAGAGC TGAGTCAGCA      10740

GCAGTTGTAA AACCACCTAC AAACATGGAT AGAAAATCTG ACTTAACCCC CGGTTGAACA      10800

CCTAGAAGGT AACGACCTTG ACTATCTTTG GGTGTAACAG TGACTTGTTT GTCACTCCCC      10860

TTTTCAGAAA TAGTCACATC CAAAGTCGGT GCCGTCTTAT CTTTGGTTTC TGTTTCCACA      10920

GCTTGGATCA AGCTTTCCCA GTTGCTAACC TCATGTGAGC CAATCTTGGT AATTTGTGCC      10980

ATTTCTGGTA CTCCTACCTT GGCCAAGGCA CCTTGGGGCA TGATATGGAA CTGATTGGTA      11040

TCAACATCTC TGACACCACC CTGCATAAAG ATTAAAACCC AAAAAACAAC GACACCTAAG      11100

ATAAAATTGT TCATAGGACC TGCAAAATTG GTAATCAGTT TGCCCCAGAT AGTCGCATTT      11160

TGATATTGAA CATCTAAAGG TGCAATCCGA ACCTCAGTAC CATCTGCTTC CACAACCGTT      11220

GCATCGTGAT CCACTGCAAA TGTTTTTTCT TCTTCCAGAA CCAATCCTTT GATAAAGAGC      11280

TTGTCTTCAA AATCAAACTG GGTCACCTGC ATAGGGAGGG CTGTTTGATC CAATTTTTTA      11340

CCTGAGAGAT TGATGCGTTT AACCTTACCA TCATCAGCAA GTGTCAAACT AACAGGCGTT      11400

CCTGTCTTGA TTTCAGTTGT ATCATCACCC CAACCGGCCA TGCGGACATA GCCACCCAGA      11460

GGCAAGATTC GAATGGTATA GGCCGTTCCA TCCTTGCCAA TGTGAGCAAA AATTTTAGGT      11520

CCCATACCGA TGGCAAATTC ACGTACTAAA ATCCCTGATT TCTTGGCAAA GTAGAAGTGA      11580

CCGAACTCGT GCACCACTAC AATAATCCCG AAAACCAGAA TAAAGGTTAA AATTCCGAGC      11640

ATAGCGTTTC CTCCGTCTTT TGATTAAAAG AGTCCAAATA AGTGCATGAT TGGAAATACA      11700

AGCAACATAC TATCGAAACG ATCCAAAACA CCACCATGTC CAGGGATAAA TTTCCCAGAA      11760
```

615

```
TCCTTAACAC CAAAATGACG TTTGATCGAA CTTTCTAGTA AATCACCAAA TTGTCCAGCA      11820

ATGCTAAAGA AAATAGCAAA GACTGACATC TTGTAAATTC CATATGGAAG AGCAACTGTA      11880

CTGTCAACTA TCATAAGGAT AATGGTTACT AAAATTGCTC CTAAAATACC ACCCAAGGCA      11940

CCCTCAAGGG TTTTATTAGG CGATACCCTT GGTGCTAACT TTCGTTTCCC ATAGTTCATC      12000

CCAACAAGAT AGGCACCACT GTCTGTCGCC CAGACGATAC ACAAGGCTAA GAGAGCCTTG      12060

TCCAAACCTG CAACACGAGC ATCTAGTAAA GCATTAAATC CAAAGCCCAC GTAGAAGCTC      12120

ATAGCAAGAG GGAAAACCGC ATCCTCAATC GTATAAGACT TGCTAAAAAC GGTCGTTCCT      12180

AACATGATTG AAATCAAAAC ACTATAGGCA ACCACATTCC CATCAACTGG CAAAAAAGTC      12240

AGGTAATTCT CCAAGGGAAT GGTCAATGCA AAGGTTGCAA AGAGGGTCAA GAGGCCCTCC      12300

ATCGTCATGG TCTCTAGACC TCTCATCTTC AAAAGTTCAT GCATGGCTAG CATGGCTATG      12360

ATTCCGATTG CTATCTGAAG CAAGAGGCCC CCAATCATTA AAATTGGTAG GAAAATAGCC      12420

AGGGCAATCC CTGCAAACAA GGTTCTTTTC TGTAAATCCT GGGTCATATT TCCTCCTAAA      12480

CTCCTCCAAA TCGGCGATGA CGACGATTAT AGGCAAGAAT AGCTTCCTGC AAGGCCGCTT      12540

CGTCAAAATC AGGCCATAAG GTGTCCGTAA AATAAAGCTC ACTATAGGCT CCCTGCCATG      12600

GAAGGAAATT GCTCAAACGT AATTCTCCAC TAGTACGGAT AATCAAGTCT GGGTCTCGTA      12660

AGTCCTTAGG CAAATGCTGA GTAAAGAGAT AGTTACCAAT CAATTCCTCT GTGATGTCAC      12720

CTGGGTTGAT TTTGGCATCT AAAACATCCT GGGAAATCAA CTTAAGCGCC TGTGTAATCT      12780

CAGCACGTCC ACCATAGTTA AGAGCAAAAT TAAGAATCAA TCCTGTGTTG TTCTTAGTCA      12840

ATTCCTCAGC CTTGGTTAAA GCTTCAAAGG TTTGCTTAGG CAGGCGGTCT GTCTCCCCAA      12900

TCATTTGAAT CTTAACATTA TTCGCATGTA GTTCCGGGAC ATAATTATCA TAAAACTCTA      12960

CTGGCAAGTT CATGATAAAC TTGACTTCCT GATCTGGACG GGTCCAGTTT TCCGTAGAAA      13020

AAGCATAGAC CGTAATAACC TTGACGCCCA GTTTGTTGGC TGCCTTGGTC ACGGTTTGCA      13080

ATGCTTCCAT GCCCGCCTTA TGTCCAAAAA CTCGCGGTTG CATACGTTTT TTAGCCCAAC      13140

GGCCATTGCC ATCCATGATG ATGCCGATAT GAGCAGGAAC CTGTGTCGGA ACCTCTACTT      13200

CCACAGCCTT ATCTTTCTTA AAAAATCCAA ACATGATCTT ATTCCTATTC AAAAATCTAT      13260

CGTTTCATTA TACCATATTT CCCCATTTTC TTCTATCACT AAGCTATTTA TTCTCAGGCA      13320

CCAAGCCCAT TTTTCAAAAA AATAAGCCGC CTGATTGGGC GACTTTATTT TTATAGGGAG      13380

ATTATTATGA AAAAGTTTTA GGAGTTTAAG TTAAGGTCTT CTTAACTTAT GAACTTAGTG      13440

TACACTCCCT AGCTTAAAGT TTCCTTAAGT ATTTTTAAAA ATCAAATTTT TCCATTTCTC      13500
```

616

```
CTGCCAATTT TTCTTGGATA AACGTGTTTG ATAGAGTTCC ATTCGGTCTT CATTTTCTAA    13560

GAAATGAGGA GTTGGACGAA CTTGAAAATT CAAAATATCC TCCAAACCAT AAGGTACATA    13620

GAGTTCAAAA TCTAATTCTT CATTCAAGCG CAGTCCAACT GCCGTACACC GTTCTGGATA    13680

CTTACTCATA GCATCACGAG AACTGGTATA GGAAGCAGTG TGAGGACTGT GCTGATGCAT    13740

ATAGACCTGA TTTTTCAATT CCCACTGGTA CTGAGGAAAA TCCTCTCTCA GCTTTTTCTC    13800

CAGTAATAAG GTTTCCTCAT AAGAAAAATC TGGATCAAAG AAAATCACAT CTATATCTGT    13860

TTCATGATCA AAAGGGGATT TGTCTGACAA AAGATTCCAG ATGAAATTTC TGACAGAACC    13920

TGCTGCCAAC CACGAGTCTT TCAAACCAAG GTCTCGGATG ATCGTCAGAA TGGCCATCAT    13980

ATCTGGACTT TCTCTAAAAG CCTCTAAGAT TTCTTGCTTA TTTTTCACTG TATTCATAAC    14040

CTAAGTGCTC ATATGCCTTA GCAGTCGCCA CCCGTCCAGA CCGTGTCCGC ATGATAAAAC    14100

CTTTTTGAAT CAAGTAAGGC TCATACATGT CTTCAACTGT CTCACGCTCT TCGGCGATAT    14160

TCACAGAAAG AGTTCCTAGA CCAACAGGTC CTCCACTGTA CATCTCAATC ATGGTGCGAA    14220

GGATTTTTTG ATCCACATAG TCCAAACCTT CATGGTCAAC ATCCAGCATA GTCAAAGCCT    14280

TATCGGTAAT AACATCATCG ATAACCCCAT TCCCCATTAT CTGGGCAAAA TCGCGCACGC    14340

GCTTGAGGAG ACGATTGGCA ATACGAGGGG TTCCACGACT ACGTAGGGCC AACTCAGATG    14400

CTGCCTCATG GGTGATTTCC ATCTCAAAAA TATCTGCCGT CCGCTCGACA ATTTCTGTCA    14460

AGTCAGCATG AGCATAATAC TCCATATGAC CTGTAATCCC AAAACGTGCC CGTAGTGGAT    14520

TTGAGAGCAT ACCAGCCCGA GTCGTCGCAC CAATCAAGGT AAAAGGAGGC AACTCCAAAT    14580

GAACACTGCG ACTGCCTTCA CCAGCCCCAA TCATAATATC GATGTAGAAG TCCTCCATGG    14640

CACTATAAAG CACTTCTTCC ACTGACATGG GTAAGCGATG AATCTCGTCA ATAAAGAGGA    14700

CATCTCCAGG CTCTAAATCA TTCAAAATCG CTACCAAATC ACCCGCTTTT TCGATAACAG    14760

GACCAGACGT TTGCTTGAGA TTGACTCCCA GTTCATTGGC AATGACAAAA GCCATGGTTG    14820

TTTTCCCAAG CCCTGGAGGG CCAAATAAGA GCACATGATC CAGCGCTTCA TCCCGCATTT    14880

TAGCGGCTTC GATAAAGATC TGAAGTTGAT CCTTAACCTT ATCCTGACCA ATATATTCAC    14940

GTAAATACTG AGGACGGAGC GTGCGTTCTA CTAACTCCTC ATCACCCATC ATCTCATTAT    15000

CTAAAATTCT ACTCATGGCT CTATTATATC AAAAAAAACA AGCCACAAAC AAAAAAGCCA    15060

CCTGATTGGG TGACTCCTAA GTTTAGCACT TATGTGGTAT AATATTATAC GGCACTTCTA    15120

CACCGCCTAC GAAAGGAGGT GAGATAGCCC ATGATGGAAT TAGTACTCAA AACTATTATC    15180

GGACCAATTG TGGTCGGTGT CGTTCTTCGT ATAGTCGATA AATGGCTAAA CAAGGACAAA    15240

TAGTGTCAAA AAAGACCTCA AGCTTATTTG GTCGTGAGCT TGGGGTCTTT TCTAGCCTAT    15300
```

617

```
GATATAGAAC TAGTACTCAA TTCCTTTTTA TTATCCCATA GTTCACGAAT TTTGTCAAAA      15360

CTTTACATTT TCTTCAACCG CTGTACGACA AGACGGTTAA GATTAAGAGA ACGTTAGGGA      15420

TTCTATCAAT TTCATAGAAA TTTTGATTTC GTAAACGAAG AGACAATCTT ACATGTCACT      15480

TCTCATTTAA TACGCCACTA CTAGACAAGC AAAATCATTA TTACAGTAGT TCCAGTCCTT      15540

CAATTAACAG TCACTTACAA TCAAATTGAG TTTGAACTAG CTGAAGCGAC CACAGACCTA      15600

TTTCTTAGTC ATATTCGCTA AAAAAATCCC CGCCAAAATC TCAAAAAGTC CCCGCCAATT      15660

CCCCGACCAA AATCCGAAAA ATACCGAAAA ATATCGAAAA ATTATTTTTA GAATAGTCCC      15720

AAAAATCCTG AAATAGAGCT AAAAAACTCC ACCTGATTCG GTGGAGTTAA GGGAGATTAT      15780

TATGAAAAAG AAAAGTTTAG GATTTTATTA AATAAAGTTA GGAGGTCTTT ATTTAATAAC      15840

TACATGATAC AAGACGAAAC TTAAAACTAG CTTAACTTTT CTAAAATTTT ACTATTTTGC      15900

AAAAAATTTC TATCACCAGC ACCTCACCAA TCGAGTAGGG GATAATCTCT AGCCCCTCTC      15960

ACACCACCGT ACGTGCCGTT TGGCATACGG CGGTTCAACT AACTTTTAAC GCATGTCGTT      16020

CAAGGTAATA ATCCAAACAC GAAACCAGTC CACGTTTTTC CAGGACTGGT TTTGATATAG      16080

CACGTTTAAG TACCGACTTC TGAGCTACTA ATTGATAATG GTCGCCCCAG CCAGATACCT      16140

TATCTGCTAT CCATTTAGGA ACTCCTAACT TAAGCAATCC CCATAATCGT CTCGATTTCT      16200

TCTTCCATTG CTTCCAGATA ATCACTCGTA GGCGAGTACG CAAGCGCTCA TCTATGCTGG      16260

CGACTATACT TTTCATATTT CCCAATGAGC AATAGTTTAT CCATCCTCGA ATAGACAAAT      16320

TCAGTTGCTC AATACGTCTT GTTAGGTCTA TACTCCATTT CCTCTGTGTT AGTTTCTTCA      16380

ATTTAAACTT AAATCTCCGA ACACTATCTT GATGTGGACG GCTTTTCCAA CCATCTGATA      16440

ATTTCCAGAA CCCAAAACCT AGATATTTCA ACTCTCTTGG TCATGTTTAC TTTCAAACCT      16500

AGCCGTTTCT CAATAAACGA CTGACTGAAT ACATC                               16535
```

(2) INFORMATION FOR SEQ ID NO: 75:

       (i) SEQUENCE CHARACTERISTICS:
           (A) LENGTH: 8136 base pairs
           (B) TYPE: nucleic acid
           (C) STRANDEDNESS: double
           (D) TOPOLOGY: linear

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

```
CCAGAGCGTT GCGTCCGAAA GTCTATCCAG ACACGGCTCT TTAAAAACAA AAGGAGAAAT       60

GATGCATACT TATTTGCAAA AGAAAATTGA AAATATCAAA ACAACCCTAG GTGAAATGTC      120
```

618

```
AGGTGGTTAC CGTCGTATGG TTGCGGCTAT GGCTGATTTA GGATTTTCAG GAACTATGAA        180

GGCTATCTGG GATGACCTCT TTGCCCATCG TAGTTTTGCC CAGTGGATTT ATTTGCTGGT        240

TTTAGGAAGT TTTCCTCTCT GGCTGGAGTT GGTTTACGAA CATCGTATTG TTGACTGGAT        300

TGGGATGATT TGTAGCTTGA CAGGGATTAT CTGTGTAATC TTTGTATCGG AAGGTCGAGC        360

AAGTAATTAT CTTTTTGGCT TGATTAACTC TGTTATTTAC CTTATTTTGG CCCTACAGAA        420

AGGCTTTTAT GGTGAGGTGC TGACGACACT TTACTTCACA GTCATGCAGC CAATTGGACT        480

TCTAGTTTGG ATTTATCAGG CACAGTTTAA GAAGGAAAAG CAGGAGTTTG TCGCGCGTAA        540

ACTGGACGGC AAGGGCTGGA CAAAGTATCT TTCCATTAGT GTGCTTTGGT GGTTGGCCTT        600

TGGCTTCATT TATCAGTCTA TTGGTGCCAA TCGTCCCTAT CGTGATTCAA TCACAGATGC        660

AACCAATGGG GTAGGGCAAA TCCTCATGAC AGCTGTTTAC CGTGAACAGT GGATATTCTG        720

GGCGGCTACC AATGTCTTTT CAATCTATCT CTGGTGGGGA GAAAGCCTGC AAATTCAAGG        780

GAAATATCTA ATTTATCTCA TTAACAGTCT AGTTGGTTGG TATCAATGGA GCAAGGCAGC        840

TAAGCAGAAT ACTGATTTAC TTAACTAGGA AAAGATGTTT GAAAGTGCTG TTTTGAGATT        900

TCGATTAAAA CAGATATAGT TGATAATCAA GGATTTATAG TATGAAAAAG AGGATCGGCG        960

GGTCCTCTTT TGTTGTTGAA AAGATAAAAA ACTCAGTAAC CTAGAAATAA GACAACTGAA       1020

GCTTTACTCT ATATTCAATT TTTAGGAATG AGAAGGTCTA GATAAAATTG GACAACTTCC       1080

TGGTCTGTGA AATCTTGACC TTTTTTGAGC CACCAGGTCA ATGTCTCGAT AAAGTTGGAC       1140

ATGACCAAGT GTTGGAGGTA AGAAGTAGGC AGATTAGGGT GGGCTTCTTT TAAATTATCA       1200

GCTAGCACGG AATAGACATG GTGTTCTAGC TCTTTATGGA GTTGACGGAG GAAGTAGTCA       1260

TTTTTGGAAA ATAGCAGACT GGTGATATGG TCTTGGTTTT TATGAAAATG GAGAAAGAGG       1320

TGGGCGAGGT AGTCCTCGGT TGAAATGGCT TGCTCTCTTT CAAAAAGATG ATGGAAGAGG       1380

TAGCGGCAGA GCTGGTCCAG AAGAAGCTCC TTACTCTCAT AGTGACAGTA AAAGGTGGAT       1440

CGTCCCACAT CTGCGAGATC AATGATATCC TGAACAGTAG TGGCCTCGTA GCCCTTAGCA       1500

TTCAAAAGTT GTATAAAAGC TTGATAGATG GCTTTTTTGG TTTTGCTGAT ACGGCGGTCA       1560

ATGTTAGTCA TATGGACACT TAAGGCAAAT TGTTCAGAAC TGAATAAAGC TGACGTTTTG       1620

CTTCTATCCT TTCTTTGAGT TTTAGTGGAT AATGATAATG AACAAGGTGT TCATAAATCT       1680

ATTATAACAA AGGAATGAGA AATATGAAGG CAAAATATGC TGTTTGGGTG GCTTTTTTCT       1740

TAAATTTGAC TTATGCCATT GTTGAGTTTA TTGCAGGTGG AGTATTTGGT TCTAGCGCTG       1800

TTCTTGCTGA CTCTGTGCAT GACTTGGGAG ATGCGATTGC AATTGGAATA TCAGCTTTTC       1860

TAGAAACAAT CTCCAATCGT GAAGAAGACA ATCAGTACAC CTTGGGCTAT AAGCGGTTTA       1920
```

619

```
GCCTGCTAGG AGCCTTGGTA ACAGCTGTGA TTCTCGTAAC GGGCTCTGTT CTAGTCATTT    1980

TGGAAAATGT CACGAAGATT TTGCATCCGC AACCAGTCAA TGATGAGGGG ATTCTCTGGT    2040

TAGGAATTAT TGCGATTACT ATCAATCTGT TAGCGAGTCT GGTGGTTGGT AAGGGAAAGA    2100

CAAAGAATGA GTCTATTCTG AGTCTGCATT TTCTGGAAGA TACGCTAGGG TGGGTAGCTG    2160

TTATCCTGAT GGCGATTGTT CTTCGATTTA CGGACTGGTA TATCCTAGAT CCTCTTTTGT    2220

CCCTTGTCAT TTCTTTCTTT ATTCTTTCAA AAGCCCTTCC ACGTTTTTGG TCTACACTCA    2280

AGATTTTCTT GGATGCTGTG CCAGAAGGTC TTGATATCAA GCAAGTAAAG AGTGGCCTGG    2340

AGCGATTGGA CAATGTGGCC AGCCTTAATC AGCTTAATCT CTGGACTATG GATGCTTTGG    2400

AAAAAAATGC CATTGTCCAT GTTTGTCTAA AAGAAATGGA ACATATGGAA ACTTGTAAAG    2460

AGTCTATTCG AATTTTCCTA AAAGATTGTG GTTTTCAAAA TATTACCATT GAAATTGATG    2520

CTGACCTAGA AACTCACCAA ACCCATAAGC GAAAGGTGTG TGACTTGGAA CGGAGTTATG    2580

AGCATCAACA TTAGAAAAAA GTGAAAAATA CTTGGGTACT ATCTTATTTG GAATAGAGTA    2640

ATTTCTTTAT TATTTAAATA TTTCAAAAAT TGGTAAGAGA AGAGCATTGT ATAAACTCCA    2700

GATATATGAT TGTTAATGAT AAAAATTTTT CGATTAGATA CAAAATGCTT GACTTGGAGT    2760

CAACTCAAAG TTATATAATA AGATAAGTGA GTTAGAATAG CGTGAATTCA GTGAATGAAA    2820

TGAGAGGAGG TTAGCGTGTG AATATTAAAT CTGCCAGTGA TTTGTTGGGA ATTTCAGCGG    2880

ATACGATTCG GTATTATCAA CCGGTTGGTC TTGTGCCACC GATTACTCGT ACTGCTACTG    2940

GGATTCGTGA TTTTCAAGAT CAGGATATCG AAGCGCTGGA ATTTATTAAG TGTTTTCGTT    3000

CGGCGGGTGT CTCTGTAGAT AGTTTAGTTG ACTATATGTC GCTCTACCAA AAGGGAGATG    3060

AAACGAGAGA GGAGAGGCTT GGTATTTTAG AAGAGGAAAA GCAAAAATTA GAGGAGCGCT    3120

TGTCTCAGCT ACAGACAGCT TTAAATCGTT TAAATCTCAA AATTAAACTT TATAAGGAAG    3180

GAAAATTTTA AATGAAATCA GCAGTATATA CAAAGGCAGG TCAGGTTGGA CTTGCTAGCA    3240

TTGAACGTCC GCAAATAATA GAAGCGGATG ATGTGATTAT TCGTGTGGTT CGTGCGTGCG    3300

TTTGTGGTTC AGATTTATGG AGGTACCGTA ATCCAGAAAC GAAAGCTGGA CACAAAAATA    3360

GTGGACACGA AGCGATTGGG ATTGTTGAAG AAGCTGGGGA AGCCATTACG ACGGTGAAAC    3420

CAGGTGATTT TGTGATTGTC CCTTTTACAC ATGGATGTGG TGAGTGTGAT GCCTGTCTTG    3480

CTGGATTTGA CGGTTCTTGC GACAATCATA TTGGCAATAA TTTGGGGGGT GATTTTCAGG    3540

CAGAATATAT TCGCTTCCAC TATGCAAACT GGGCGCTGGT TAAAATCCCT GGTCAACCTT    3600

CTGACTATAC AGAAGGGATG CTCAAGTCCC TTTTGACTCT TGCAGATGTC ATGCCGACAG    3660
```

```
                                            620
GCTATCATGC GGCGCGTGTT GCAAATGTTC AAAAAGGGGA CAAGGTTGTT GTTATCGGTG      3720

ATGGGGCTGT TGGTCAATGT GCTGTCATCG CGGCTAAGAT GCGTGGAGCA TCACAAATTA      3780

TCCTTATGAG CCGTCATGAA GACCGTCAAA AGATGGCTAT GGAGTCAGGT GCGACAgcTG      3840

TTGTTGCAGA ACGTGGTCAA GAAGGAATTA CCAAGGTGCG TGAAATCCTC GGTGGAGGAG      3900

CAGATGCAGC ACTTGAATGT GTTGGTACGG AGGCTGCTAT AGAACAGGCG CTAGGTGTTC      3960

TTCATAATGG AGGGCGTATG GGCTTTGTAG GAGTCCCACA CTATAATAAT CGTGCTCTTG      4020

GTTCGACATT TATGCAAAAT ATCTCTGTAG CAGGTGGGGC AGCTTCTGCT ACAACATACG      4080

ATAAGCAATT TTTACTAAAA GCCGTCCTTG ATGGTGATAT CAATCCAGGT CGCGTCTTTA      4140

CTTCAAGTTA TAAACTGGAA GATATCGACC AAGCCTATAA AGATATGGAT GAACGTAAGA      4200

CAATTAAGTC TATGATTGTA ATCGAATAAA AAACGAATAG GAGTTTTAGA ACTCTATTCG      4260

TTTTTTATGT TATCCTATTC TTGATTTAGG GTACTTTCTC TTAATGTCAG TCTGGTTCCC      4320

AGCATGGTCA GGCTAGGGAT TTTCCGACCG TGGAGGACTT CCTTGTTAAG AATATCCATA      4380

CCTGCTCGGC CCATTTCTTC AGTATAAACT GTAATACTAG AGAGGGGAGG ATAGACCTGT      4440

TTGGTCAGAC TAGTGTCGTT AAAGGAAATG AGGCTGACGC GATCTGGCAG GCTGATTCCA      4500

GCTTCTTGGA GGGCACGGAG GGCACCGATA GCTAAACTAT CGCTGGCTGC GAAAAATGCT      4560

GGCGGAAGTT GGTCTCCCAA GCTCTGAATG GCCTCCTTCA TTAAGTCATA GCCAGACTGG      4620

GCAGTAAATC TTCCTTGAAA GACCAGTTCA TCATGATAGA TTCCCCTCGC TTGACTATAG      4680

TTTTTGAAGT TTTCTAGACG CTTGTCCTGA ATGATTTCTT CTTGGTCTGT TGTTTCTTCA      4740

AGGCCTGTTA GAATCCCGAT ACGGTCCATT CCTTGACTGA GGAAATAATC GACAACCTGT      4800

TTCATAGCAG TGTAAAAATC CGTGATAATA CAGGTATGTC CCAGGGAAAG TGTATCGCTG      4860

TCTAGAAATA CAAGAGGCTT TTGGTATTCT TCAAAGGCAG AAATCTGAGC TCGACTAAAC      4920

TTTCCGATGC AGAGAATCCC AATCACTTCC TCGCTTAGGG TAAAAGGGTG GTCATTAAAA      4980

TAGCGCAAGA TATCATAGTC CAACTCTTGG GCTCTTTTTT CTATTCCTAG GCGAATCTGG      5040

TAGTAGTAGA GGTCGTCCAG CTCCCCTTGT TCGCTGACCC ATTGGATAAT GGCAATCTTT      5100

TGCTTGGGTT TGTGGGACTC GCCTGTCTTG AGGTGCTTGG TGTAGCCCAG CTCTTCAGCA      5160

ACGGTTAAAA TACGGTGTCT GGTTTCTTCT GTAACAGATA GGCTCTGGTC GCGGTTGAGG      5220

ACGCGGGATA CGGTCGCGAT AGAGACAGAG GCTAGCTGTG CAATGTCTTT TAAGGTAGCC      5280

ATAAATCCTC CTTGATTAGG TTAGTATATC ATGTTTTTCT TCTTTTTACT GATATTTTAC      5340

TAAAATTTTA GTAAAAAGGA TTGACCTTGG AAAATTCCTT GGATATAATA GAAAGAAAAC      5400

GATTACACGT TAAGATGGCT TAACGGACAG TCAAAGGAGA ATTCATATGG CACAACATCT      5460
```

621

```
TACTACTGAA GCCCTTCGCA AAGACTTTCT TGCTGTTTTT GGTCAAGAAG CAGATCAAAC    5520

CTTCTTTTCA CCAGGCCGCA TTAATTTGAT TGGTGAACAC ACAGACTACA ACGGTGGGCA    5580

CGTTTTTCCT GCTGCTATTT CCTTGGGAAC TTACGGTGCA GCTCGTAAGC GTGACGACCA    5640

AGTCTTGCGT TTCTACTCAG CTAACTTTGA GGACAAGGGC ATTATCGAAG TGCCTCTCGC    5700

TGACCTCAAG TTTGAAAAAG AGCACAACTG GACCAATTAT CCAAAAGGTG TCCTTCATTT    5760

CTTGCAAGAA GCTGGGCACG TGATTGACAA AGGTTTTGAT TTTTATGTTT ATGGAAATAT    5820

TCCAAATGGT GCTGGCTTGT CTTCTTCTGC ATCCTTGGAA CTCTTGACAG GAGTCGTGGC    5880

TGAGCATCTC TTTGATTTAA AATTAGAGCG TCTCGATTTG GTTAAAATCG GCAAACAAAC    5940

AGAAAACAAC TTTATCGGAG TAAACTCTGG CATTATGGAC CAGTTTGCTA TTGGTATGGG    6000

GGCAGACCAA CGTGCTATTT ACCTAGATAC TAATACTTTA GAATACGACT TGGTGCCACT    6060

TGATTTGAAG GACAATGTCG TTGTTATCAT GAACACCAAC AAACGCCGTG AATTGGCGGA    6120

CTCTAAATAC AATGAACGTC GTGCTGAGTG TGAAAAAGCA GTGGAAGAAT TGCAAGTTTC    6180

CTTGGATATT CAGACTCTGG GTGAATTGGA CGAGTGGGCC GTTGACCAAT ATAGCTATCT    6240

GATTAAAGAT GAAAATCGTT TGAAACGTGC TCGCCATGCT GTGCTTGAAA ACCAACGTAC    6300

CCTCAAAGCT CAAGTAGCAC TCCAAGCAGG AGATTTGGAA ACATTTGGAC GCTTGATGAA    6360

TGCGTCACAC GTTTCTCTGG AGCATGATTA TGAAGTAACT GGTTTGGAAT TGGATACCCT    6420

TGTTCACACA CCTTGGGCAC AAGAAGGAGT TCTCGGTGCT CGTATGACAG GGGCTGGTTT    6480

TGGTGGCTGT GCcATTGCCT TGGTTCAAAA AGATACTGTT GAGGCCTTTA AGGAAGCTGT    6540

AGGCAAACAC TACGAGGAAG TAGTTGGATA CGCTCCAAGC TTCTATATCG CTGAAGTTGC    6600

AGGTGGCACT CGCGTCCTTG ACTAGTCAAA AGGAGGCTCT ATAGTGACCT TAGTAAATAA    6660

ATTTGTAACA CATGTCATTT CTGAAAGCTC ATTTGAGGAA ATGGATCGAA TCTATCTGAC    6720

CAATCGTGTT TTGGCACGAG TGGGAGAAGG TGTTTTGGAA GTTGAGACCA ATCTGGATAA    6780

ATTGATTGAC CTCAAGGACC AGCTGGTTGA AGAAGCCGTT CGATTAGAGA CGATTGAGGA    6840

TAGTCAGACT GCGCGTGAAA TCCTTGGTGC TGAACTGATG GATTTGGTGA CTCCTTGTCC    6900

AAGTCAGGTC AATCGTGATT TTTGGGCAAC CTACGCCCAC TCTCCAGAAC AAGCGATAGA    6960

GGATTTTTAC CAACTCAGTC AGAAAAATGA CTACATCAAA CTCAAGGCCA TTGCTAGAAA    7020

TATCGCTTAT CGTGTTCCAT CTGACTACGG AGAACTTGAA ATTACCATCA ATCTCTCTAA    7080

GCCTGAAAAA GATCCCAAAG AGATTGTGGC AGCCAAGTTG GTGCAAGCTA GTAATTATCC    7140

TCAGTGTCAG CTTTGTCTAG AGAATGAGGG CTACCATGGT CGAGTTAACC ACCCAGCTCG    7200
```

622

```
TAGCAATCAC CGTATTATCC GTTTTGAAAT GGTTGGTCAG GAATGGGGTT TCCAGTATTC      7260

GCCCTATGCT TACTTTAATG AGCATTGTAT CTTTTTAGAT GGCCAGCATC GTCCCATGGC      7320

CATTAGTCGT CAGAGTTTTG AACGTCTGTT GGCTATCGTA GACCAGTTTC CAGGATATTT      7380

TGCTGGATCT AATGCCGACC TGCCGATTGT GGGGGGCTCT ATTCTAACTC ATGATCATTA      7440

TCAGGGAGGC CGTCACGTAT TTCCTATGGA ATTGGCTCCC TTGCAAAAGG CCTTCCGATT      7500

TGCTGGTTTT GAGCAGGTCA AGGCTGGAAT TGTCAAGTGG CCCATGTCTG TCCTACGTTT      7560

GACTTCGGAT TCCAAAGAGG ATTTGATCAA TTTGGCTGAT AAGATTTTGC AGGAATGGCG      7620

CCAGTATTCA GATCCTGCAG TGCAGATTTT GGCAGAGACA GACAGGACAC CGCATCACAC      7680

TATCACACCC ATTGCCCGCA AACGCGATGG ACAGTTTGAG TTGGACTTGG TCTTGCGAGA      7740

CAATCAGACT TCAGCAGAGT ATCCTGATGG TATCTATCAT CCCCACAAGG ATGTCCAACA      7800

TATCAAGAAG GAAAATATCG GCTTGATTGA GGTCATGGGC TTGGCAATCT TGCCACCACG      7860

TCTGAAAGAA GAAGTGGAGC AAGTCGCTAG CTATCTTGTA GGAGAAGCTG TTACAGTTGC      7920

CGATTATCAT CAGGAGTGGG CAGACCAACT CAAATCCCAA CATCCAGACT AACGGATAAA      7980

GAAAAAGCCC TTGCAATCGT CAAGGACTCT GTGGGTGCTA TCTTTGCGCG TGTACTTGAG      8040

GATGCAGGAG TCTACAAGCA GACAGAACAA GGGCAGACAG CCTTTATGCG CTTTGTGGAA      8100

CAGGTCGGAA TTTTACTAGA CTAGGAGCTT TCTCGG                                8136
```

(2) INFORMATION FOR SEQ ID NO: 76:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10011 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

```
CCCATAGTGA AGAGTGGCCA TAAGAAGGTC TTCTAGGCTT AATTTAGGTT TTCGTCCACC        60

TTTTGCGTGT TTAAGTTGAT AAGCTGTTTT TAACACAGCT GAACATCTCT TCAAAAGTCG       120

TGCGCTGAAC ACCAACAAGA CATTTAAATC GTGTATCAGT TAGTTGTTTA CTTGCTTCAT       180

CATTCATAGA ACTACTATAC CATGTTTTGT TTCGCAGGAA GTCTAATATT GTCAAATACT       240

GGAACGCTCA TTGCTGGGAT ACGGAATAAG ATTGGCCCAG CTTCGATAAC TGGGATACCT       300

GGTTCAAAAC CAAGGTCTGT TGCAGCGATT GGTGTAAAGA TATCGTAACC TTTCATAAGG       360

TCTTCGTTTA CATCTTTCAC CATAACTGCA TCACAGTGAA CATCGTAACC ACGGTTTGAA       420

AGTTCTTCTT CTAGAGCACT TTTAATTTGG TGACTTGAGT TAACACCTGC ACCGCAGGCA       480
```

623

```
GCAAGAATTT TAATCATTTG GATTTCCTCC GATTTTATTT TTTAATAGAC AAGATTAAGC    540

GGTTGCTTCA GCAATGTAAG CATAAAGGGC TTCTGGTTCA GAAATTTTTG ATAGGTCTTC    600

AAGATGACCA TTTCCTGTGA AGAAGTCCAT TAACTGAGCA AGAATGTTCG TTTGACTTGA    660

ACTTGAATTA TTGATGATAA AGAAGAGCAA GGATACTTCT ACTTCCTTAC CTGGCGCAAT    720

CATATTATGG AAAGTCACCG GTTTCTCTAA TCGAACAACC ACCACTTTCT CAGCTAGATT    780

ATGAACAATA TCTGTGTGAG GAATCATTAC ATTTGCAAGT CCTTTCCTAG AAATTCCATA    840

TATAAACCAG TTGGAAATGA CTTTTCACGC GTGATCAAGG CTTCACGATA AGTTGGAGTG    900

ACAATTTCTC GTTCTTCCAA CAAGCTTGCT ACCTGATCAA AAAGTTATTC TTGATTATCC    960

GCTTCTAAGC AAAACACAAG GTTTTTGTCA AAGAAATAAT CTAATACCAT AAGGTTTTCC   1020

CTTCTTTCCA TTAACTTTAT GCTATAAGTA TAACACTATA TGAAATCGTT GTTAATTACT   1080

TTCTATTCTT TTTTGTCTCT TTTTTTATAT TTTTGTTTTG TTTATAGTTT GTTATATAAA   1140

AATAAACACA CAAACAAATA CTCCAAGCAT TTTTCTGTTC TAATACTCAA TGAAAATCAA   1200

AGAGCAAACT AGGAAGCTAG CCGCAGTTGT TCAAAACACA GTTTTGAGGT TGTAGATGAA   1260

ACTGACGAAG TCACTCAAAA CATGGTTTTG AGGTTGTAGA TGAAACTGAC GAAGCAACAg   1320

CCATACATAC GGTAAGGCGA CGCTGACGTG GTTTGAAGAG ATTTTCGAAG AGTATAAAAA   1380

CTAAAAAAGC AGACCATCTA AGCCTGCTTT ACTATTGATT CTTATATAAA TTTCCTGTGA   1440

ACAAGGAAAG GCATTTCTGA TAACTTATTC TTCATCCATA CTCAAGACGC TGAGGAAGGC   1500

TTCTTGCGGA ACTTCAACTG ATCCGATGGA TTTCATGCGT TTCTTACCAG CTTTTTGTTT   1560

TTCAAGGAGT TTACGCTTAC GAGAAACGTC ACCACCATAA CATTTAGCAA GTACGTTCTT   1620

ACGAAGGGCC TTGATATCAG TACGAGCGAC AATCTTGTGT CCAATAGCCG CTTGGATTGG   1680

AACTTCAAAT TGTTGGCGAG GGATGATTTT CTTGAGTTTA TCAACGATGA GTTTCCCACG   1740

TTCGTAGGCA AAGTCCTTGT GAACGATAAA GCTGAGGGCA TCCACCTTAT CTCCATTGAG   1800

AAGAATATCC ATTTTCACCA GCTTAGATGG GCGATATTCT GACAATTCGT AGTCAAAGCT   1860

TGCATAACCA CGTGTCGAAG ACTTAAGTTT ATCAAAGAAG TCAAAGACAA TTTCAGCAAG   1920

AGGAATTTGA TAGATAACAT TGACACGGTT ATCATCAATA TAGTCCATAG TCACAAAGTC   1980

CCCACGCTTA CGCTGAGCTA GCTCCATTAC TGCTCCGACG AACTCCTGTG GTACCATGAT   2040

TTGCGCCTTG ACATAAGGCT CTTCAATGGT CGCAATCTTA GTTGGGTCTG GAAACTCAGA   2100

TGGGTTAGAC ACATCCATAG ACTCACCGTC GGTCAAATTA ACTTTGTAAA TAACAGACGG   2160

AGCTGTCATG ATGAGGTCAA TATTGAACTC ACGCTCTAAA CGTTCCTGGA TAACATCCAT   2220
```

624

```
ATGGAGAAGT CCAAGAAATC CACAACGGAA ACCAAATCCA AGTGCCTGAG ATGTTTCTGG        2280

TTCAAACTGA AGACTAGCAT CATTCAGTTG CAATTTTTCA AGcGCTTCAC GCAGGTCATT        2340

GTACTTGTTT GATTCGATTG GGTAGAGACC CGCAAAGACC ATAGGATTCA TCTGCTTATA        2400

ACCATGTAAT GGTTCTGCCG CAGGATTGGT TGCCAAGGTA ACGGTATCAC CCACACGAGT        2460

ATCCTGAACC GTCTTGATAG ACGCCGCAAT GTAACCAACA TCACCAGTCG CAAGGAAATC        2520

ACGACCAACC GCTTTTGGTG TAAAAATACC GACTTCGGCC ACATCAAAGG TCTTACTATT        2580

GCTCATGAGC TGAATCTTAT CACCAGGTTT GACCACTCCG TCCATGACAC GCACTTGGAG        2640

GATAACCCCA CGGTAAGCAT CGTAAACAGA GTCGAAAATC AAGGCCTTAA GTGGCGCCGT        2700

CACATCACCC GTTGGTGCTG GTACTTTTTC TACAATTTGC TCGAGGATTT CTTCAATCCC        2760

AATACCAGCC TTGGCAGAAG CCAAAACTGC TTCACTGGCA TCCAAACCAA TCACATCTTC        2820

AATCTCTGTA CGCACGCGCT CCGGATCTGC AGCCGGCAGG TCAATTTTAT TAATGATAGG        2880

CATGATTTCC AAATCATTAT CCAAAGCCAG ATAAACGTTG GCAAGAGTTT GAGCCTCAAT        2940

TCCTTGAGCC GCATCGACCA CCAAAATAGC ACCCTCACAG GCAGCTAGCG AACGTGAAAC        3000

TTCATAGGTA AAGTCAACGT GCCCTGGTGT GTCAATCAAG TGGAAAATAT AAGTTTCCCC        3060

ATCTTTTGCA GTGTAATTCA ACTCGATGGC ATTCAACTTA ATAGTAATTC CACGTTCCCG        3120

CTCTAGCTCC ATGCTATCCA AAAGCTGGGC CTGCATTTCA CGACTTGAAA CCGTCTCTGT        3180

TTTTTCCAAA ATGCGGTCTG CTAGAGTTGA TTTTCCGTGG TCAATATGGG CGATAATAGA        3240

GAAGTTACGG ATCTTCTCCT GTCGTTTTTT CAATTCTTCT AAGTTCATGA TTCTCTTCCT        3300

TTCAGGGTAT CTATTTATTA TAAATTGTTT TTGATATTTT GACAAGACCA TACCCTGCTA        3360

GGAGTACTAA TCTTCAGCGA CAAAGCCGTC ATTTTCGATA AAGTGGTGTT CTGTCATTCC        3420

TTGGTCTGTA AAGACAATCC CGTGAAGGAC ACCACCATAA ACAGCTCCTC CATCCATTCC        3480

AATCTTGCCA TCTTCTGTAG TCCAAAGCTC AGATGTACCG CGTTCTTGCT GTAACAAACC        3540

ATAGACCGGT GTATGACCGA AGACAATGGT TTTTCCAGTA TGATTTTCAG CTCCGTGGAA        3600

TGGTTTTCTA AGCCATACTT TTTTATAATC TGTTGTTTCA TGCCAGTCGT CCAAGGTCAA        3660

ATCAATACCT GCGTGAACAA AGATATACTT GTCTGTCTCT ACTACAAATG GCATTTGACG        3720

AATGAATTCG ACCAAGTCTG CCGCTTCAGC GgCAACCCGC TTGGCATCTT CTACTCCATC        3780

AACTGGTGCA TCCAAGGGAC GACCTAGGAT AGAGTTAATG GTTGTATCTC CACCATTGCG        3840

ACTATAATGG TCATAACTTT CTTCTGGGTC ATCTAGCCAA GTCAAAAACA TATACTCGTG        3900

GTTTCCGGAC AAACAGATAG CCCCTTGATT GTCCACCAAG TCCTTGACCA TTTCAAGAAC        3960

ACGGTGACTA TCCTCACCTC TGTCAATCAA ATCACCTAGA AAGAGCAACT GGGGCTGACC        4020
```

625

```
ATCCCAGGTT TTGAGAAGGT CTTCCAGCAT CCCAGCTTTT CCGTGAACAT CTCCAATTAC    4080

ATAATAATCT GTCATCTTAT TTCTCCCTGT TTCTCAACAA TTCTCTTGCT TGCGTCAGGG    4140

CTGCTTCTGT CACATCATCA CCTGCCAACA TCTTGGCAAC TTCCTCCACT CGCTCTTCGA    4200

CCGTCAAGAG ACGAACAGTC GAAACCGTTG AATGGTCATT ACTAATCTTC TCAATAAAGA    4260

ATTGATAATC TGCAATCGCA ATTACTTGTG GCAAATGGGA GATAGCCAAA ACCTGACCAT    4320

GCTGACCAAT TTTATGAATT TTCTGAGCAA TAGCTTGAGC AACACGACCT GAAACTCCCG    4380

TATCCACCTC ATCAAAGACA ATGCTAGTCT TGCCTTCTTT ACGTGAAAAG GCAGACTTAA    4440

TGGCTAACAT GAGACGAGAT AATTCCCCTC CAGAAGCAAC CTTAACCAAG GGTTTAAAGT    4500

CTTCTCCAGG GTTGGTTGAA ATATAAAACT CAACCATTTT ATTTCCCTCA CGACTGAATT    4560

TTCCCTTACT AAAACGAACC TGAAACTGGG CTTTTTCCAT ATAAAGATCT TGCAGTTCTT    4620

GTTTAATCTC AGCTTCGAGT TGCTGAGCCA AATTATGACG AGCAGAAGCA AGTTGACCTG    4680

CCAAATTGAC AAGATTGACT TCCAACTTCT TAAGCTCTGC TTCCATGTCC TCAGACGAAA    4740

GATTATTGCC TGTCAAGAGA TTGTATTCTT CCGTAATCTT GGCAAAATAA AGCAAAACAT    4800

CATCAACAGT CCCACCATAC TTACGAGTAA TAGTATGAAG GAGGTCCAAA CGATTCTCAA    4860

CCTGCATCAG GCGATTGCCA TCAAAATCAA GGTCCTCAAT GATAGCTTCC AAACGTTTGC    4920

TAATGTCTTC TAAAACATAG TAGGTCTCAG ACAGATAGCT TGAAATTTCA CGGTATTCAG    4980

GATCATACTC TTCGACACTT TCCATGTCAT TCATAGCTGA ACGAACATTG GCCAGACTTG    5040

AAAAATCTTC ATTGTCCAAC ATACTGTAGG CATTGGTCAG TGTATCCGCA ATATTTTTGT    5100

GGTTGAGGAG TTTATCTCGC TCTTGATTGA GAGCCAAGTC TTCTCCAGCC TGCAAGTTTG    5160

CTGCCTCAAT CTCTGCCATT TGAAATTCCA ACATTTCGAT ACGTGCCTTG TGTTCCTGTT    5220

GGTTTTTCTT GACTTCCAGA ACCTGCTTGC GCATTTTCCG ATAGGCATCA AAACTCGTTT    5280

GATAGGTTTC TTTCAAGTCC CAAAAAGCGG CATCACCAAA TTCATCCAAC ATCTGGATAT    5340

GCAGTTGGGG ACGCATTAAC TCCTCATGGT CATGCTGACC ATGAATATCT ACAAGATGTT    5400

GCCCAATAGC TCGCAAAACA GACAGATTAA CCATCTGACC ATTTACACGG CTGATACTAC    5460

GACCATTTTG CAAGATTTCC CGACGGATGA TAATTTCATC ACCTAATTCT AAACCTTGCT    5520

CATCAAAAAT TTCCTGTAAA AGACGACTAT TCTCAACTGA GAAAAGCCCC TCAATCTCTG    5580

CCTTTGGTGC ACCATGACGA ATAACATCTG TCGTCGCACG AGCTCCCAAC ATCATATTCA    5640

TGGCATCAAT GATAATCGAC TTCCCTGCAC CCGTTTCACC AGTCAGGACA GTCATCCCCT    5700

TTTCAAAATT GAGGGAAATA GCCTCAATAA TGGCAAAGTT TTTTATCGAA ATTTCAAGTA    5760
```

626

```
ACATATAGAC CTACCAATTT TTTACTTGTT CAAAGATTTC CTCTGCTAGA CTTCCACTTC     5820

TGGCAATGAC TAAAATCGAG CTATCATCAG TCAAACAGCT AAAAATCTTG TCTGCAAAAG     5880

TCTCGATTAA CTGAGCTTTT ACAAAAGCCG TATTTCCTGG AATAACTTGG AGATTGATCA     5940

TCTTATCCAT CAATTCAGCC GATTCGATAT TGTCTTCAGC CAGTTGCAGA CTTTTTACGA     6000

TTGATTTTGG CAATTCGTAG ACATAGGTGT TGTCTCTCAA AGGAATTTTG ACAATACCTA     6060

ACTCTTTGAT ATCTCGGGAT ACCGTCGCCT GAGTGGCAGT GATACCTGCT TCTTTCAAAT     6120

GTTCTACAAT TTCTTCTTGC GTGCCGATTT GATAATCTGT CACCAATCTT CTAATTTTTT     6180

CAAGTCTCTC TTTTTTATTC ATTTTTAAAT TGACTATGCG CCCTCTCTAC TGCTTCTTTA     6240

ATCTCAGCAA GAATCTGATT GCTTGCTGAC TTTTCTTTTT TCAAATACGC TAAAAATTCA     6300

ATATTTCCAT GTCCACCTTG GATGGGAGAA AAGTCCAAGC CAAGGACTGA AAAACCTACC     6360

TCTACTGCCA TAGCTGTTAC AGATTCAAGG ACATTCTGAT GAACCTTAGC ATCTCGAATA     6420

ATTCCATTTT TCCCAATCTG CTCACGTCCT GCCTCAAACT GAGGTTTGAC AAGTGCTACC     6480

ACCTGACCTT GATCAGCCAA GACACGGTGC AAGGCTGGCA AAATCAGACT AAGGGAAATG     6540

AAACTCACAT CAATACTGGC AAAGCTCGGC TCCTGCTCGA AATCAGTCTT TTCAGCATAG     6600

CGGAAATTGA ACTGCTCCAT GCTGACAACT CGTGGGTCTT GGCGTAATTT CCAAGCCAAC     6660

TGATTGGTAC CAACATCGAC TGCAAAGACC AACTTGGCAC TATTCTGTAG CATGACATCG     6720

GTAAAACCTC CAGTAGAGGC CCCGATATCA ATCGTAGTCG CGCCATCCAC CGACAAATCA     6780

AAGACCTGCA AGGCCTTTTC CAGTTTCAAA CCACCACGGC TGACATACTT GAGTTTCTCC     6840

CCCTTGAGTT TTAATTCGGT GTCATCTGGA ATTTTCTCTC CTGGCTTGTC AAACCGTTCT     6900

CCATTAAGGA CTGCTACGAC TAGGCCAGCC ATCACACCTC GCTTGGCCTG CTCTCTCGTT     6960

TCAAACAACC CCTGTTTATA AGCTAGTACA TCCACTCTTT CCTTAGCCAT TGATTCTCAA     7020

ACTTTCTACT ACACTTACAA TCGATTCTGT TTCAAAGGGA AGCTGCTGGG CAATTTCTTC     7080

TAATTTTTCA TTAGCTTGAT CCAGGGTTTG GTTACAAAAG GCAATGGACT CTTCCAAGCC     7140

CAACAGGGCA GGATAGGTTG ATTTTTCTGC CTGCAGATCC TTTTGAGGTG TCTTGCCGAT     7200

TTCCTCAAAA CTAGCTGTCA CATCCAGTAC ATCATCTCTG ACTTGAAAAG CAAGTCCAAT     7260

CAATTCACCC ACAGTTTTCA GCTTCACCTG CATTTCAGGT GACAATTCAG CTATAATAGC     7320

TGCCGCTTGG AAGGGATAGG CTAGTAACTT CCCAGTCTTA TTGGCATGAA TAGTCTGAAG    .7380

TTCTTCCAAA GACAAGTGCT GGTGTTCGCC CTCCATATCC AAAACTTGCC CTGCTACCAT     7440

ACCCAGACTA CCTGAAGCAA GGGATAAGTT GGCAATCAAG TCCACCTTAA TCTGACTTGG     7500

CAAATCTGCC TGCGCAATCA AGGCATATGA GTCTAAGAAT AAGGCATCTC CAGCCAAAAT     7560
```

627

```
GGCCATAGCT TCACCGAATT TCTTGTGATT GGTTAACCGC CCTCTTCGAT AATCGTCATC    7620

ATCCATAGCA GGAAGGTCAT CGTGAATCAA GCTCCCTGTA TGAATCATCT CTAAGGCAGT    7680

AGCTACCTGC GCGTGAGCAG GTTTGATGGT AACCTGCAAG GCTTCCAGAA CTTCTAACAA    7740

GAGAAAAGGC CGAATACGCT TGCCACCAGC ATGAATAGAA TAGAGAACAG ACTCCCGTAA    7800

ACTAGAGGCA AACTGCTGGT CTCCATAAAA ATCTTCCAAA GCCGACTCGA CAAGAGCTAA    7860

TTTTTCTTGC TTTTTCATTC AAAATCACTT TCTGTTCCGT CTTCTTGCAT GACCTTGACC    7920

AAGGTCTTTT CAGCCTTGTC CAGCGTAGCT TGGAGCTCTT TTGACAAGAC CATGCCCTTT    7980

TGAAAGGCAG TAATCGCATC TTCCAGAGCA ATTTCACCAT TTTCCAAACT TTGGACAATG    8040

GTTTCCAGTT CTGCTAGATT TTCCTCAAAT TTCTTTTGTT TTGACATCTT TAACCTCTAA    8100

TTCTACTTGA CCATCTCGCA TCAAAAGCGT TACTTGGTCT TTTTTCTTCA AACTCTCAAC    8160

CGAATCTACA ACGGACTCTT CTTTTTTGAC AATAGCATAA CCACGCGCCA CGATTCGGCT    8220

AGTATCCAAC ATGAGCAAAG CTTCCGAAAG TCGCTTGGCC TCAGCAACCT TGGCGTCATA    8280

AACTAACGCC ATTTGGCTAC CTAAGAGCTT GTCCAACTGT CCTAAACGGT CTTGATAGCG    8340

TTGGATTTTG GTAACAGGTG ATAATTGTAC TAATTGATGA GTTCTTGCTT GAACTAATTG    8400

TTTGTTATCA GAAATCCGAG TTCGCAAACT TTGTTTCAAA CGCAGTTGCA GTTGGTCCAA    8460

GCGTTGCAAA TAACCGTCAT ACAAGCGCTC AGGTTGTCTA AAGATAACAG ACTGACTGCA    8520

TTTTTTCAAA GCCTCTTGTT TCTTAGATAG AACATTTCGG ACTGCCGTTA CCATCCGTTT    8580

TTCCTGATTT TGCAAATGAG CTAATACATC CAACTTGGTC ACAGGTGTTG CCAGTTCAGC    8640

CGCCGCTGTT GGCGTTGCAG CGCGTCGATC TGCCACAAAA TCTGCCAAGG TCACATCCGT    8700

CTCATGCCCC ACACTAGAGA TAACTGGCAA ACGAGATTCA AAAATAGCTC GTACCACAAT    8760

TTCTTCGTTA AAGGCCCAGA GATCCTCAAT AGAACCACCT CCACGACCAA TAATGAGCAA    8820

ATCCAAATCG TCCCGTTGAT TAGCACGCGC AATATTTCTA GCAATTTCCT CCGCAGCCCC    8880

TTCACCTTGA ACCTTGGTCG GATAAAGAAG GATGTCAACA CCTGGGAATC GCCTGCTGAC    8940

GGTCGTGATA ATATCTCGAA TAACGGCTCC ACTACGGCTG GTTACTACAC CAATTCTCTT    9000

AGAAAATTGG GGCAGAGCTT GCTTGAAGCG TTCTTGAAAC AGGCCTTCTT CTGTCAATTT    9060

TTTCTTAAGT TGTTCAAACT GAATCGCAAG CGCCCCAACC CCATCAGGCT CAGCTTTTTC    9120

AATGATGATG GAGTAGCTAC CACTTGGTTC ATAGACCTGT ACACGCCCAA TCACATTGAT    9180

CTTCATTCCT TCTTCCAGGT CAAACCCTAA TTTCTGATAA ATCCCAGACC AGATGGTCGC    9240

TTGAATAACT GCATGGTCAT CCTTTAGGGA GAAATATTGG TGAGTAGGTC GTTTACGAAA    9300
```

628

```
GTTGGAAACT TGACCAGTTA AATAGACCCG TTCCAAGTAT GGGTCTTTAT CGAATTTCAT      9360

TTTCAGATAC TTGGTCAAAG TTGTTACCGA TAAATACTTT TCCATCTCCA CCTACTATTC      9420

ATTTACTTGC TCTTTCATGG GTATTATTAT ACCAAAAATA TGCCTAAAAA TCTCCATTTA      9480

TGTACCATTA TGAGGGAAAA ATAGAAAAAG GAGGCAAGGC CTCCACATGT GATTATTTGC      9540

TGTTTCGAGC TTCTTCCAAA ATCTTTGCAA TCTTGGTCGT CAACAGGTCG ATAGCCACGG      9600

TATTGCTAAC CCCTTCAGGA ATGACGATAT CAGCATAACG CTTAGTTGAC TCGATAAACT      9660

GGTGGTACAT TGGTTTGACC ACACCTAAGT ACTGGTTAAT AACGCTATCA AGGCTACGGC      9720

CACGCTCCTC CATATCACGC TTGATACGAC GAATAATGCG CACATCGTCA TCCGTATCCA      9780

CAAAAATCTT GATATCCATC AAATCGCGCA GACGCTTGTC CTCCAAGACC AAAATACCCT      9840

CAACGATAAA GACATCTTGA GGTTCCTGAC GATAGGTCTT GCTACTCCGT GTATGCTCTG      9900

TATAGTCGTA GGTCGGGATG TCCACCGGAC GCCCTGCCAA CAATTCCTTA ATCTGCTCGA      9960

TCATCAAGTC TGTATCAAAG GCAAAAGGAT GGTCATAGTT GGTTTTGACG G             10011
```

(2) INFORMATION FOR SEQ ID NO: 77:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 5365 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

```
CGTGTGGTCT TAAAAATAGA AGACAAAGAA CAAACTGTTG GAGGCTTTGT CCTTGCAGGC        60

TCAGCCCAAG AAAAAACCAA AACAGCTCAA GTTGTGGCTA CTGGACAAGG TGTTCGTACC       120

TTGAACGGTG ACTTGGTTGC TCCAAGTGTT AAAACTGGAG ATCGTGTCTT AGTTGAAGCC       180

CACGCAGGTC TTGATGTCAA AGATGGCGAT GAAAAGTACA TCATCGTAGG CGAcTAACAT       240

TTTGGCAATC ATTGAGGAAT AGAAGGAGAA AGTAAGTATG TCAAAAGAAA TTAAATTTTC       300

ATCAGATGCC CGTTCAGCCA TGGTTCGTGG TGTCGATATC CTTGCAGACA CTGTTAAAGT       360

AACCTTGGGA CCAAAAGGTC GCAATGTCGT TCTTGAAAAG TCATTCGGTT CACCCTTGAT       420

TACCAATGAC GGTGTGACCA TTGCCAAAGA AATCGAATTG GAAGACCATT TTGAAAAATAT       480

GGGTGCTAAG TTAGTATCAG AAGTAGCTTC TAAAACCAAT GATATCGCAG GTGACGGAAC       540

TACGACTGCA ACAGTCTTGA CCCAAGCTAT CGTCCGTGAA GGAATCAAAA ACGTCACAGC       600

AGGTGCAAAT CCAATCGGTA TTCGTCGTGG GATTGAAACA GCAGTTGCCG CAGCAGTTGA       660

AGCTTTGAAA AACAACGCCA TCCCTGTTGC CAATAAAGAA GCTATCGCTC AAGTTGCAGC       720
```

629

```
CGTATCTTCT CGTTCTGAAA AAGTTGGTGA GTACATCTCT GAAGCAATGG AAAAAGTTGG      780

CAAAGACGGT GTCATCACCA TCGAAGAGTC ACGTGGTATG GAAACAGAGC TTGAAGTCGT      840

AGAAGGAATG CAGTTTGACC GTGGTTACCT TTCACAGTAC ATGGTGACAG ATAGCGAAAA      900

AATGGTGGCT GACCTTGAAA ATCCGTACAT TTTGATTACA GACAAGAAAA TTTCCAATAT      960

CCAAGAAATC TTGCCACTTT TGGAAAGCAT TCTCCAAAGC AATCGTCCAC TCTTGATTAT     1020

TGCGGATGAT GTGGATGGCG AGGCTCTTCC AACTCTTGTT TTGAACAAGA TTCGTGGAAC     1080

CTTCAACGTA GTAGCAGTCA AGGCACCTGG TTTTGGTGAC CGTCGCAAAG CCATGCTTGA     1140

AGATATCGCC ATCTTAACAG GCGGAACAGT TATCACAGAA GACCTTGGTC TTGAGTTGAA     1200

AGATGCGACA ATTGAAGCTC TTGGTCAAGC AGCGAGAGTG ACCGTGGACA AAGATAGCAC     1260

GGTTATTGTA GAAGGTGCAG GAAATCCTGA AGCGATTTCT CACCGTGTTG CGGTTATCAA     1320

GTCTCAAATC GAAACTACAA CTTCTGAATT TGACCGTGAA AAAATTGCAAG AACGCTTGGC    1380

CAAATTGTCA GGTGGTGTAG CGGTTATTAA GGTTGGAGCC GCAACTGAAA CTGAGTTGAA     1440

AGAAATGAAA CTCCGCATTG AAGATGCCCT CAACGCTACT CGTGCAGCTG TTGAAGAAGG     1500

TATTGTTGCA GGTGGTGGAA CAGCTCTTGC CAATGTGATT CCAGCTGTTG CTACCTTGGA     1560

ATTGACAGGA GATGAAGCAA CAGGACGTAA TATTGTTCTC CGTGCTTTGG AAGAACCCGT     1620

TCGTCAAATT GCTCACAATG CAGGATTTGA AGGATCTATC GTTATCGATC GTTTGAAAAA     1680

TGCTGAGCTT GGTATAGGAT TTAACGCAGC AACTGGCGAG TGGGTTAACA TGATTGATCA     1740

AGGTATCATT GATCCAGTTA AAGTGAGTCG TTCAGCCCTA CAAAATGCAG CATCTGTAGC     1800

CAGCTTGATT TTGACAACAG AAGCAGTCGT AGCCAATAAA CCAGAACCAG TAGCCCCAGC     1860

TCCAGCAATG GATCCAAGCA TGATGGGCGG GATGATGTAA GCTTTCTATA GAAAACAACT     1920

TATAAAAAAC ACAAAAGGAG GGAATGACTA ACCCTTCTTT TTATAGGCTC TTTGTCAACT     1980

GTAGTGGGTT GAAGTCAGCT AAGCTCGAGA AAGGACAAAT TTCGTCCTTT CTTTTTTGAT    2040

GTTCAAAGCG ATAAAAATCC GTTTTTTGAA GTTTTCAAAG TTTCGAAAAC CAAAGGCATT    2100

GCGCTTGATA AGTTTGATGA GATTATTGGT CGCTTCCGGT TTGGCGTTAG AATAGTGTAG    2160

TTGAAGGGCG TTGATAATCT TTTCTTTATC TTTGAGGAAG GTTTTAAAGA CAGTCTGAAA    2220

AATAGGATGA ACTTGCTTAA GATTGTCCTC AATAAGTCCG AAAAATTTCT CCGGTTCCTT    2280

ATTCTGAAAG TGAAACAGCA AGAGTTGATA GAGCTGATAG TGATGTTTCA AGTCTTGTGA    2340

ATAGCTCAAA AGCTTGTCTA AAATCTCTTT ATTGGTTAAA TGCATACGAA AAGTAGGACG    2400

ATAAAATCGC TTATCACTCA GTTTACGGCT ATCCTGTTGT ATGAGCTTCC AGTAGCGCTT    2460
```

```
                                    630
      GATAGCCTTG TATTCATGGG ATTTTCGATC CAATTGGTTC ATAATTTGAA CACGCACACG      2520

      ACTCATAGCA CGGCTAAGAT GTTGTACAAT GTGAAAGCGA TCCAACACGA TTTTAGCATT      2580

      CGGGAGTGAA ACAGTCTGGG AGACTGTTTC AGCCTGAGCC TAGAAATTTG AAAGCGAAGC      2640

      TGTTTAGCCA AGTCATAGTA AGGACTAAAC ATATCCATCG TAATGATTTT CACTTGACAA      2700

      CGAACGGCTC TATCGTAGCG AAGAAAGTGA TTTCGGATGA CAGCTTGTGT TCTGCCTTCA      2760

      AGAACAGTGA TAATATTAAG ATTATCAAAA TCTTGCGCAA TGAAACTCAT CTTTCCCTTA      2820

      GTGAAGGCAT ACTCATCCCA AGACATAATC TTTGGAAGCC GAGAAAAATC ATGCTCAAAG      2880

      TGAAAGTCAT TGAGCTTGCG AATGACAGTT GAAGTTGAAA TGGCCAGCTG ATGGGCAATA      2940

      TCAGTCATAG AAATTTTTTC AATTAACTTT TGAGCAATCT TTTGGTTGAT GATACGAGGG      3000

      ATTTGGTGAT TTTTCTTTAC CAGGGGAGTC TCAGCAACCA TCATTTTTGA ACAGTGATAG      3060

      CACTTGAAAC GACGCTTTCT AAGGAGAATT CTAGAAGGCA TACCAGTCGT TTCAAGATAA      3120

      GGAATTTTAG AAGGTTTTTG AAAGTCATAT TTCTTCAATT GGTTTCCGCA CTCAGGGCAA      3180

      GATGGGGCGT CGTAGTCCAG TTTGGCGATG ATTTCCTTGT GTGTATCCTT ATTGATGATG      3240

      TCTAAAATCT GGATATTAGG GTCTTTAATA TCGAGCAGTT TTGTGATAAA ATGTAATTGT      3300

      TCCATATGAA TCTTTCTAAT GAGTTGTTTT GTCGCTTTTC ATTATAGGTC ATATGGGACT      3360

      TTTTTTCTAC AACAAAATAG GCTCCATAAT ATCTATAAGG GATTTACCCA CTACAAATAT      3420

      TATAGAGCCG AAAATTCACA TCTAATATAT GCAGACTACT TTGAAATGAA ATTAAAAAAA      3480

      TTATTAAAGG ATGACACAAA AGTTTTTGAA AAATCTACAT TCAAATTTGT AGAAGGATAT      3540

      AAAATATACC TGACAGAATC TAAAGAATCT GGAATTAAAC AAATGGACAA TGTCATAAAA      3600

      TATTTTGAGT TTATTGAATC TAAAAGTATT GCTTTATATT TTCAAAAACG ATTAAATGAG      3660

      CTGATAGATT AAATAGCATT TTCTCTGTTG AGATATTGTT TTTAAAATAT TGTACTAAAT      3720

      GATTGATGCT ATGTGGAAAT ACAAAAAAAT GTTTTTGATA CGAAGTTGAC CTGTATTTTT      3780

      TATACTAATC ATTTTCGTAT TTTTTGTATT AAACGATATA AGTTTGTTGT AAACTTACAA      3840

      GGAATAAAGA CATTAAAAAA TAACAGTATA TCTATTTGTT TTATATATTT TACGAATTCT      3900

      GCATAAATCT CTTTCTAGTA ATGTGTTGTA ACTCTGCTAT AATAGATTTA TTCCTTTTTG      3960

      TGTTTACACA ATTTATTTTA TAGTACCAAA AAAGGTCAGG ATTTTGTTCC TGACCTTTGA      4020

      CAACTTTACC GATTCTTTAG TTCTACATAG CGCTTGTACC AAATGTTTAC ATAGGCTTCT      4080

      GAGAAAGGAC CACGTCCATT GTTAATCCAA TCAACAAGAA TTTTGACATG TTCTTTTAAA      4140

      ATATAGTCCA AGTCATCAGA ATAATTCATT TTGCGTTTGT GACGCTCGTA CTCTTCAACG      4200

      TCCAAGAGAC GTTTTTCCCC ATCTGTAAAA ATTTTAACAT CCAAATCGTA ATCAATATAC      4260
```

631

```
TTCAGTGCTT CTTCATCCAG ATAGTAGGGG CTAGCCATAT TGCAATAGTA AGAAGTTCCA     4320

TTATCACGAA TCATGGCAAT GATATTAAAC CAATATTTCT TGTGAAAGTA AACAATAGCC     4380

GGTTCTCGAG TGACCCAACG ACGACCATCA CTTTCGGTAA CAAGTGTATG ATCGTTGACA     4440

CCAATAATGG CGTTTTCTGT TGTTTTTAGT ACCATGGTGT CCCGCCAAGT TCGGTGGAGA     4500

CTCCCATCAT GCTTATAACT TTGAATTGTA ATAAAGTCGC CTTCTTTTGG AAGCTTCATA     4560

ACTAACCAAC TTTCTACAAT TTATAAGTTT ATCATTTACT ATTGTACCAT AAAATTACCC     4620

AAAATCTGTG AATTTCACTT GGAAATATTA AAGATATTCT CTAAGAGCGC TTGCTATATC     4680

CGAAAAATCG TAGCCCTTTC GTGCTAAAAC TTGAGTTAAA CGCTGCTTCA GTTCGTATCC     4740

TTCATACTTT CGGGCATACT TAGTATATTG CTTATCAAGT TCCTTGAAGA TGAGTTCCTG     4800

AGTCGTTTCT TCATCAACTT GACTATCCAA TTCGTCAAAG GCAATTTTAG CATCAAAATA     4860

AGAGAAGCCC TTGTTAGTCA AGTTCTGGAT AATCTTATCT TGCAGGGCAC GAGCTGGAAG     4920

TTTTCCCTCA TATTTTTTCA ATAGTTTATT GGCTACACGT TGAGCAACTT CCGAAAAATC     4980

AAAATCATTC AAGATTTCTT CTATAGTAGA TTTTGAAATT CCTTTTTGTG CTAATTTCTG     5040

AGTCAGTACA TAAGGTCCCT TGTCTCCTGA AAGTTGATTG GCATTGATGA TAGCATAAGC     5100

GTACTGGCTA TCATTAATCC ACTTCTCTTC TTTAAGATTA GCAATGACTT GAGAAACGAT     5160

GTTTTCATTA ATATCATATT TTTTCAGATA TTCTCTGACC TCTTTTTCAG TACGTGCTTT     5220

AAACGATAAG TGGTAGAGGG CCAGATTCTT ACCATAAGAA AATTGAGCAA AGTCTTGAAT     5280

CTCTTTCAAT TCCTCTTCGC TTATCACCTT ATCTCTCGAT AACATAAAAC GAACAATTGT     5340

GTCTTCGGTG ATATAGCATT TGTCG                                          5365
```

(2) INFORMATION FOR SEQ ID NO: 78:

   (i) SEQUENCE CHARACTERISTICS:
     (A) LENGTH: 3636 base pairs
     (B) TYPE: nucleic acid
     (C) STRANDEDNESS: double
     (D) TOPOLOGY: linear

   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

```
TTTCCAGAAA GAAGTTGAGT AAAGTCTTTA TCAAAGAGAA TGACTTCCGT ATTGGAACTG       60

ACATTAGGTT TTATTTCTAC TTTACTAGCG TCCGCCCTAG CATTTTCTAA ATCTTTAATC      120

TCTTCTGTTG CCCTATTTAT AGCCAGCTGA ATAACTGCTT GAGGATTTTC ACTCAGTCCA      180

TGAAGCTTAT CGTCCACCGA AGTATAAAGA CTCGAATGCA TGACTTGTAA AATAATCAGA      240
```

632

```
GTCATTGTAG AAAAAAATCAG GGTGAAGACA CCGAAGTTGC GGATAAAATA ACTAAAGTCA    300

TCCGCATACC ATGTTTTTTT AAGTTTACTG AACATCTTTT AAAAGATACC CAACACTACG    360

CAAAGTTTGC AAATTCTCTG CAAAAGTGGT TCCCTTTAAT TTCTTACGGA CTTTTGAAAC    420

ATAGACTTCG ACAACCGAAA TCGTTGTATC ACTATCAAAT CCCCATAGAC GGTCAAAAAT    480

CTGCGTCTTA GGCAAAATCA CATTTTGATT TTGAAGGAAA TAAACTAGTA AATCGAACTC    540

TTTCCCCAGC AATTCGACAG GAGTATCTTC AACTTTAACG GTATTGGTTG ATAAATTAAC    600

CACGATATTC CCATAAGTCA AGGTGTTTTC ATTAAACTTC CCTGAACGTT TGAGAAGGGC    660

CTGAATCCGC ATTTTAAGTT CTTCTAGGTA GAAAGGTTTG GTCAGATAAT CATCCGCTCC    720

CAGTTCAAAT CCATGTCCCT TGTCATCCAA ACTTTCCTTG GCAGTCATAA TCAGAACTGG    780

TGTCGTAATT CCCTTTTCAC GCAATTCTTT TAAGACTTGG AAACCATTTT TTTCTGGCAA    840

CATCAAATCC AGCAAAATCA AGTCATAGAC ACCACTCTCA GCTTCGTAGA GACCTTCTTC    900

TCCATCAAAT ACCTGCATAA CATCCGCAAA ATCGTCTAAA AAGTCAAATA CTGAATTTGA    960

CAGACCTAGG TCATCCTCAA CCAATAAGAT TTTTATCATG AGAAACTCCT CCTTATTAAA   1020

ACTATTATAC CAAATTTGCC TTAAAAAAAA CTCAACTCTC TGCATTTTAC ATGAGATAGC   1080

TGAGTTTTCT TTTTATTTTA GGCTTATTTA TGCATTTCCG TATTGAAGAA CAACTGCTTC   1140

GACTGCAGCT TTTTCACGGC TAATCAAGTC AACACGCGCT GCAATTTCCT TGATTCCCAT   1200

ACCGATGTTA CGGCTAAGAG CAAGGTCAGA AAGTTGCGGT TCAAAGAACT CCTTGTATTC   1260

CGCCAAGCGT TGCTGAGTCT TAAATACATG AGCAGGAAGG ATAACAAAGC TATCAAAGCT   1320

CATATCTCCT CCAAGGGCTG CCTTAATCCA AGCCCAGTTT TCACGCGCCC AAGACCAAGC   1380

TGTTTTCTGA GTTGCTTGAT GAGCTAGGAA TTGGTAATAC CAAGCAGACA AGTCCTGTGG   1440

TTTGACCACA AATTTGTCCT TCCAAGAAGT AATCAGGTTT TGGATATTAT CCGCATCTGT   1500

ACTGTATGCA AGAGCTGCTG CCAACTGGCG TTTAAAGACA GCATCTGTTG CGTGAGTATA   1560

AGTATCAAGA TAAAGTGCTA ACAAGTCTTT AGTCTCATGA TGTTTCATCT CATTAATCAG   1620

AACTTGTGAG CGAATAGCTG CTGGGAGTCC TGCAAGATTC TCCTTGTGTG TTGCGAAGAT   1680

TTGGCTAGCG ACTTGACTAG CTTCTGCATC ATTTGAGCGA ATCATCATCG AAACAGCCAG   1740

CTGACGAACC AATTCATCCT CATCTGATTC TCCGTCTTTA GCTTCAAAAC CAAGACGGTC   1800

ATAGTTATGA CGAGCCAATT TAGCAACCAG TCCTTTGAAG GCTGTTTCAG CATCCGTTCC   1860

TTCATCAATA AAGCGCTCAA GGGCTGAAAT CACTTGAGAA ACAGCTGAAA CCACCAGATA   1920

AGACTCTTCC TTAGCAAGTT TATCAAGAAC TGGAAGCAAG TCTGCATAAG AAATGTGCCC   1980

TGCCTCAGCC AACAAACGAC GTTCTTGAAC AATTTGCAGT TTGCTTGTGT TATCAAGTGT   2040
```

633

CTCTAGCTCA GCAAGAACAG CTGCTAACAA GTCTCCTTGA TAGTCGGTAA TATAGTGGGC   2100

AGTATTTTCA GTGTTGAGAC GAAGAGCTCC TTCATTTTCA GCAAGAAGAG CTGCGTAGCC   2160

AGGGATTTCG ATACTTTCAG TTTCGAGTGT ATCAGGCAAG CCTTTCCAGT TGCTATTGAG   2220

GGGCACCACC CAGAGACGGT TCTTGTCTTC GTTCTCACCG ATGAAGAATT GTTTTTGTGA   2280

AATCTTCAAG ACATCATTTT CAACTTTAAC AGTAAGAACT GGGTAACCAG GCTGTTCCAA   2340

CCAAGAATCC ATGAAGGCTG CGACATCACG TCCTGACGCT TGACCAAGGG CATCCCAAAG   2400

GTCACTACCA ATGGTGTTGC TGTATTGGTG TTTTTCAAAG TAGGCGTGCA AACCTTTAGC   2460

AAAATCAGCA TCTCCTAGCC AACGGCGAAG CATGTGCATG AGACGGCTTC CTTTGGCATA   2520

GACGATAGCG CCGTCAAAGA GTGTATTGAT TTCATCTGGA TGTTTAACTT CGACGTGGAC   2580

AGACTGAACG CCATCAGTAG CGTCACGTTC AAGAGCAAGA GGTACTCCAC CTGTTTGGAA   2640

ATCTTCAAAG ATATTCCAGC TTGGTTCGAT GGTATCCACA CAGACGTATT CCATCATATT   2700

AGCGAAACTT TCATTGAGCC AAAGGTCATC CCACCATTTC ATAGTCACGA GGTTCCCAAA   2760

CCATTGGTGA GCCAATTCAT GGGCCACAAC AAGGGCAACT TGTTGACGGC TAGCAAATGT   2820

AGAGTTCTCA TCGACAACCA AGTAAACTTC ACGGTAGGTC ACAAGACCCC AGTTTTCCAT   2880

AGCACCAGCT GAGAAGTCAG GAAGGGCGAT GTGGAGAGAT TGAGGAATTG GGTACTTAAC   2940

TCCATAGTAA TCTTCGTAAA ACTCGATAGA GCGAACAGCG ATATCCAGTG AGAAATCAAG   3000

ATTTGAAAGT GGATGTGCTT TGGTTGAGTA GACACCTACC AGGGTACCAT TTTTAGTTTT   3060

AGCGGTCACC CCTTGCAAAT CACCAGCAAC AAAGGCCAAC AAGTAAGAAG ACATGCGAGG   3120

TGTTGTCTCA AACTTCCAGA TACCTGTTTC CTTACGGTTT TCAACATCGA TTTCTGGCAT   3180

GTTTGACAAG GCCAATTCAC CTTCTGCTTG GTCAAAGCGA AGAGAGAGGT CAAAAGTTGC   3240

TTTGGCTTCA GGCTCATCCA CACATGGGAA AGcTTCGCGC GCAAAATGGC TCTCGAACTG   3300

AGTAGACAAG ACCTCCTTCT TGACTCCATC AACTGTATAA TAAGAAGGGT AAATCCCTGT   3360

CATGTTGTCT GTAATTTTAC CAGAAAAGGC AAGAACCAAT TCAACTTGAC CAGCCTCAGC   3420

CAATTCGATA TGAAGGGCTT CATTGTCATG GTCAACTGTA AATGGACGAG CTTGACCTGC   3480

AACTTCTACA GAGGTGATTT CCAAATCTTT TTGGTGGAGG GAGATGCGGT CACTCTGTGC   3540

TTGACCAGTG ATGGTCACTT TCCCAGAAAA AGTCTTGGTC TCACGACTCA AATCTAAAAA   3600

TAAATCATAA TGTTCAGGAA CAAATTGCTT AATGGG   3636

(2) INFORMATION FOR SEQ ID NO: 79:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 5066 base pairs

634
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

```
ATAGCGTGTA ATAATCGATT TTAGAGGTAC CATAAGCCAC CTCCTACAAA TAGAAACCGA        60

TATAAATCAA TGCCTTCCAC CCTTAGACTT CCCTAGTTCC TGTCTCAAGC GAAACATTTC       120

TTTGAAACAG GAATAAGTTA ACCAATTCAT ACCAATAGCT AGCAGAATAA AAAGAAACCA       180

AATGCCCCAT AACTTGATAT CTGTCACATT TCTCAAGACG GTATTGAAAA ACAGAACTGA       240

AACAACTGTC CAAGCAAGGC TAAAAAGAGA ATAGAAGGGG ATGTAAAACC AGTAAAAATA       300

ATAAAAAATT GGAAAAAACT TACTATTTCT GTTGGCCTTT TCAATCCAGT TATCAAAATA       360

AAAGTACGGT GCTAAAAGTA AGAATTTAAA CAAATGTTCC ATCACCGACA TCCCCCCTTC       420

TTTTGATAGC GTTTTCTATT ATTTTATTAT ATCAAAAAAA TCCGGAACTG TCATTCCAGA       480

TTCTACTTTT TTATTTGCGT TTTCTTGCGA TGAGATGAAT CGGTGTTCCC TCAAAAACAA       540

AGGCCTTGCG GATTTGATTT TCCAAGAAAC GCAGGTAAGA AAAGTGCATG AGTTCTTCTT       600

CATTGACAAA GATGACAAAG GTTGGTGGTT TGGTTGCCAC TTGGGTCGCA TAGAAAATCT       660

TGAGACGTTT TCCTTTGTCT GTCGGTGTTG GGTTGATGGC AATGGCATCC ATGATGACAT       720

CGTTCAAGAC AGCTGATGGA ATACGTGTAT TTTGACTTTC GCTGATTTGC TTAATCATCT       780

CAGGAAGTTT GTGGAGACGT TGCTTGGTTA AAGCTGATAC AAAGATAATC GGTGCGTAAG       840

GCAGGTATTG GAACTGCTCA CGGATATCTT CTTCCCAGTT TTTCATAGTG TGGTTATCTT       900

TTTCAAGCGT ATCCCACTTG TTGACCACGA TAATCATCCC TTTACCAGCT TCATGGGCAA       960

ATCCTGCGAT ACGCTTGTCG TACTCACGAA TGCCTTCTTC CGCATTGATG ACCATCAAGA      1020

CCACATCTGA ACGGTCAATA GCACGCATGG CACGCATAAC AGAGTATTTC TCAGTATTTT      1080

CATAAACCTT ACCAGACTTA CGCATACCAG CCGTATCAAT CATGGTAAAC TCTTGACCAT      1140

CTGTATCTGT AAAGTGGGTA TCAATGGCAT CACGAGTTGT TCCAGCAACA GGACTAGCAA      1200

TAACACGGTC TTCTCCCAAG ATAGCATTGA TCAAGCTTGA TTTTCCAACG TTAGGACGAC      1260

CAATCAAGCT AAACTTAATG ACATCTGGAT TTTCTTCCTC ATATTCATTT GGAAGATTTT      1320

CTACGATCGC ATCTAGCACA TCCCCTGTAC CGATTCCATG GACAGATGAG ATAGGCAATG      1380

GTTCACCCAA ACCGAGAGCA TAGAAATCAT ATATATCATT TCTCATCTCA GGGTTGTCCA      1440

CCTTGTTGAC TGCGAGGATA ACTGGTTTGT GGGTCTTATA AAGCTTACGA GCTACGTATT      1500

CGTCTGCATC AGTAATTCCT TCCTTACCAG ACACGACAAA AACGATAACA TCTGCTTCTT      1560
```

635

```
CCATGGCAAT TTCTGCCTGG TGCTTGATTT GTTCCATGAA AGGAGCATCG ACATCATCAA      1620

TTCCTCCTGT ATCAATCATG CTAAAAGAAC GATTGAGCCA CTCACCCGTT GCATAAATAC      1680

GGTCACGTGT CACTCCTTCG ACATCTTCTA CAATGGAGAT TCGCTCACCA GCGATCCGAT      1740

TAAATAGGGT TGATTTCCCA ACATTGGGAC GTCCTACAAT GGCAATAGTT GGTAGGGCCA      1800

TAATTTCTCA CTTTCTACAA TAATTTCTTC TGTTCAAGAT TTTTTCTAGT TGAGCTTGGT      1860

TCAGCTTGAC CAAACTGTTC TGCTAGGCGC TGACTCCAGC TTGTGGTCGC ACGCGCCCCA      1920

GCATAGTCAG CCTGAACACG GTCATAAGCT TGGATTGCCT CAGTTGACTG TTCTTGGTAT      1980

TCTTCCTCAA AGACAACATT CTCTAGTGGC AGTCTCGGTT TCATATCATG ATGTTGATTT      2040

GGCACACCCA GTGCCATCCC AAAGACAGAA TAGGTGTAGT CAGGTAGGTT AAAGAGCTCT      2100

GCCACTTCTT CAGACTTGTA TCGAACCAAA CCGATAATCA CACCACCATA GCCCAAGCTT      2160

TCAGCTGCCA ACAAGGCGTT TTGTCCAGCA AGAGCTGCAT CGACCGAACT AATCAAGAGA      2220

CCTTCCACAC CTTGGGGTTG GAAGGTGTCG GTATGAAGTC GGGCTCCCTT TTCTGCTCGG      2280

TTCAAATCTC CGACAAAGAG AAGGAAAACA GCAGACTGGC GAATGGCTTC TTGAGGTACC      2340

AATTCATACA AGGCATCTTT CTTCTCTTGA CTTCGTACCA CAATCACAGA GTAGGATTGG      2400

AAATTCTTCC AAGATGATGC CATCTGGGCT GCTGTCAAAA TCTCATTTAA GTCTACTTGG      2460

GGAATTTCTT GCTCTTTAAA CCTGCGCACT GAAGTATGAG CCTTCATCAA TTTAATGGTT      2520

TCTGTCATCG ACGGTTTACT CCTTCTAAAC GAGTCTCCTC AGCCAAATAA CGGATGCGTT      2580

CCATGACCCG TCTGGCTTCC CAGGTTTCGT CATTTCCATG TTTCACTTTC GCAAAATGCT      2640

TCTCCAAATC TTCAAAGTTG AAGTTGGATG TGAAAAAGGT CGGTAAATTT TCCTGCATCC      2700

GATATTGGAG AATGACCTGC AGGATTTCGT CACGCACCCA AACGGTTGAT TGCTCGGCGC      2760

CAATATCATC TAAAATCAGG ACCTCAGACA GCTTAATCTC ATCCACCAAG GTCTTAACAT      2820

TGCCATCACT GATAGCATTT TTGACATCAA TGACAAAGCT AGGATAGTGG AGGAGAGTTG      2880

ATGAAACACC ACGTTTTTCT GATAAATCAT GAGCTAAGGC CGCCACCATG AAACTTTTAC      2940

CCACACCAAA GTCTCCATAT AAGTAAAGAC CTTTTCGAAT AGCTGGATAT TGCTCCACGA      3000

AGGCTAGTAG CTTTTCAAAA ACTGGTAAGC GCCCCAAATC ATCCAAGTCA ACTTGAGCCA      3060

AACTAGCTTT CTTGAGACTG GCTGGTAGAT TGATTAACTT GAGACGGTTC TTAATAGCCG      3120

CTTCTTTTTC AGCCGCGATT AGCTCAGGAG TTTCTTCATA TGAAACATCT GCATAACCAT      3180

GATTCTTAAC CAAAATCGGC TTGTAGCCTT TGGCAATATA ATCCGTATCC CCACGGAGAA      3240

ACTTGTCACG CTCGGTGATG TACTGATTAA ACTTGGAGAT ACTGCGATTT AATTCCTTTG      3300
```

636

```
GAGTTAAGGA TTCTTGCTGG ATAAAGGCCG CAACATCAGG GTCCTTCATG ATTTTCTGGA      3360

CCAAATCTTG ATAATAAAAA CGGCTGGGTT GACGTTTGAG TACGTCTCCG ACACTTTCCA      3420

TCTAATCTCC TCCTTTTTCT AATCGAGCTA ATAGTTCTTG CTTCTTACGT TCTAGTTCCA      3480

GACGAGTTTC CTCGCTGGTT TCATTCTTAT ATTCAGGATT ACTCCATTTA GGAACATTGG      3540

TTTTTTCTGG GGCAGTCTGA TTCTGTTTTT GTGTTTTTGC TTTCTGCCCT CGATCACGAA      3600

TTCGTAAAAC GGCCTCTTCT GCCGAATGAA TCTTTTGATA GGCATAGTCA TTGGCTACCT      3660

TCATGGCATA TTTCTCATTG ATATTTGCCG AATCCACCTT ATTAAAGGTC AATAAGAGAA      3720

TAATATTGAT GACTTCGTCC AGTAAGCCCA AGCCAGCCAT CTGTTGCAAG AGTTCTCTTT      3780

CTGTTTGGGT AATGGTTCCC TTGCGTGTTT GCTTGATTTC TGCTAAGAAC TGCAGGGCAG      3840

TTTTACTTTT AGCTTCTTTG ATAATGGTCG CTTCCTTAAG ACTAAAGTCA GAGGAAACTG      3900

GTTTTTGAGC AATTTTTTCA CGCATGCGTT TGGTTGAAAT AACCTGGGAA ACAGCTGTTG      3960

ACTTGGCCAA TTGATAGGTT TCAAACCAAG TCCATTTCTT CTCCTCGGCA ATAGCAAAGA      4020

GGTTTAAGAC ATCGGACTGC TCATCCGCAA AACGAAGTCC ATCTCGAGCC ATCAGCTGGC      4080

GAAAATGTTC CAAGTCAAAA TCATTGGCCA CTTTCTTCTT GAGACCAAGG TCTTCTTGAC      4140

TGCCTAGTTC TGCCAATTCT GGAAAGACTT GATTGAGTGA GACAGGTATT TCTTCACCAT      4200

CAGCACTTTC AACTTTCAAA TCCTCCACAG CTACATCGCC AATCTTTTTC TCTAAGAGTC      4260

TGCGATAAAC AGGATGCCCC AAGAAGTCTT GACTAGATAG AGGAGCATGG AGGGCTAGCT      4320

GATAAACATC ACCCTTTTGA TAGAGGGTCA AGAGATTAAA AGCAGATAAG ATTTTCAATG      4380

ATTTTATCAG TCTATCCATC CCAAAGTTGA GATGGTTGAG AATGCTTGAA AAAAGATATT      4440

CCTTTCTACC ATTATCCCAA AAACTGATTG TATAAAGATA AAGGCTCAGT GCCTCCTGAC      4500

CGATAATCGG GAGGTAGCAC TGTACCAGAG ATGAGGTATC TTGCGACACC CGATTATTCT      4560

TTAGATAAGA AAAACGGTCA ATTGGCTTCA TTTATCTTTC CTTTTTCTTT TTAGAGGACT      4620

GGGTGATTTG TTGGAGCAAG CTCTCTAACT CACTGACATC CTTAAAACTA CGATAGACAC      4680

TAGCAAAACG TACATAGGTA ATCTCGTCCA ATTCAGCCAA CTCCTCCATG ACGAGTGAAC      4740

CAATGTCCTC ACTTTGAATT TCATTTTCAT TTCGACCACG GAGTTTCTGT TCGATACGAT      4800

TGACTACCAT GTTGATTTCA TCACTTGACA CAGGACGTTT CTGGGCTGAG CGGATAATCC      4860

CATTAAAGAT TTTATCTCTG GAGAATTGTT CCCGTGTGCC ATCTTTTTTA ACAACCACTA      4920

AGGTTCTTTC TTCTACTCGT TCGTAGGTTG TAAAACGGTG TTGGCATTCG TCGCACTCAC      4980

GTCTTCTACG AATGGTGTTC CCTTCTTCTG CTTGGCGACT ATCGATAACA CTTGACTTGG      5040

TAGCCCCACA TTTTGGACAG GGTACC                                          5066
```

637

(2) INFORMATION FOR SEQ ID NO: 80:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 9607 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

CACTTGAAGT ATTTGAAACA GCTATGGAAA ACATCATGCC TGTACTTGAA GTACGTGCAC   60

GTCGTGTTGG TGGTTCTAAC TACCAAGTCC CAGTTGAAGT TCGTCCAGAA CGTCGTACAA   120

CACTTGGACT TCGTTGGTTG GTAACAATCG CTCGTCTTCG TGGTGAACAC ACAATGCAAG   180

ACCGTCTTGC AAAAGAAATC TTGGATGCTG CTAACAACAC TGGTGCAGCA GTTAAGAAAC   240

GTGAAGATAC TCACCGTATG GCTGAAGCTA ACCCTGCATT CGCACACTTC CGTTGGTAAG   300

ATAGGATGCG AAAGCGTTAA GAAAGTCCCA GAGAAAATAG GGAATCGAAG CAGGTTGCGG   360

TTGCAACCAA TGAGATTCAT CTTTTTCTCC AGACTTTTAG CTTGAGCTCA ACTAAATCAT   420

GATGCTAGGA ACGGTAAGGA TGCAAGGTAA AAATAGGAAA CTGACGCAGT ATTCGACGAA   480

TACAAGGAGT TTTATCTTTT TCACGCAGCA TCCCGTTCCA GCTCACATCG CTAACTAAC   540

TTTAGCCCGG GTTCAAATTA GCTAAATCGA TTAGTATTAG CTATAACTCA GCTTACCATC   600

TCGTAAGTTG AAACCAACAA TAGCATGAAA ACATTGAGAA CGGGTAGGTC CTGCCTATCC   660

GTTTTTATTA AAATCGTGTT ATAATAGAAT AGAAATCAAA AATAAATAGG AGAAACAAAC   720

CTCATGGCAC GCGAATTTTC ACTTGAAAAA ACTCGTAATA TCGGTATCAT GGCTCACGTC   780

GATGCCGGTA AAACAACAAC TACTGAGCGT ATTCTTTACT ACACTGGTAA AATCCACAAA   840

ATCGGTGAAA CTCACGAAGG TGCGTCACAA ATGGACTGGA TGGAGCAAGA GCAAGAACGT   900

GGTATCACGA TCACATCTGC TGCGACGACA GCTCAATGGA ACAACCACCG CGTAAACATC   960

ATCGACACAC CAGGACACGT GGACTTCACA ATCGAAGTAC AACGTTCTCT TCGTGTATTG   1020

GATGGTGCGG TTACCGTTCT TGACTCACAA TCAGGTGTTG AGCCTCAAAC TGAAACAGTT   1080

TGGCGTCAAG CAACTGAGTA CGGAGTTCCA CGTATCGTAT TTGCCAACAA AATGGACAAA   1140

ATCGGTGCTG ACTTCCTTTA CTCTGTAAGC ACACTTCACG ATCGTCTTCA AGCAAATGCA   1200

CACCCAATCC AATTGCCAAT CGGTTCTGAA GATGACTTCC GTGGTATCAT TGACTTGATC   1260

AAGATGAAAG CTGAAATCTA TACTAACGAC CTTGGTACGG ATATCCTTGA AGAAGACATC   1320

CCAGCTGAAT ACCTTGACCA AGCTCAAGAA TACCGTGAAA AATTGATTGA AGCAGTTGCT   1380

638

```
GAAACTGACG AAGAATTGAT GATGAAATAC CTCGAAGGTG AAGAAATCAC TAACGAAGAA      1440

TTGAAAGCTG GTATCCGTAA AGCGACTATC AACGTTGAAT TCTTCCCAGT ATTGTGTGGT      1500

TCAGCCTTCA AAAACAAAGG TGTTCAATTG ATGCTTGATG CGGTTATCGA CTACCTTCCA      1560

AGCCCACTTG ACATCCCAGC AATCAAAGGT ATTAACCCAG ATACAGACGC TGAAGAAATT      1620

CGTCCAGCAT CTGACGAAGA GCCATTTGCA GCTCTTGCCT TCAAGATCAT GACTGACCCA      1680

TTCGTAGGTC GTTTGACATT CTTCCGTGTT TACTCAGGTG TTCTTCAATC AGGTTCATAC      1740

GTATTGAATA CTTCTAAAGG TAAACGTGAA CGTATCGGAC GTATCCTTCA AATGCACGCT      1800

AACAGCCGTC AAGAAATCGA CACTGTTTAC TCAGGTGATA TCGCTGCTGC CGTTGGTTTG      1860

AAAGATACTA CAACTGGTGA CTCATTGACA GATGAAAAAG CTAAAATCAT CCTTGAGTCA      1920

ATCAACGTTC CAGAACCAGT TATCCAATTG ATGGTTGAGC CAAAATCTAA AGCTGACCAA      1980

GACAAGATGG GTATCGCCCT TCAAAAATTG GCTGAAGAAG ATCCAACATT CCGCGTTGAA      2040

ACAAACGTTG AAACTGGTGA AACAGTTATC TCAGGTATGG GTGAACTTCA CCTTGACGTC      2100

CTTGTTGATC GTATGCGTCG TGAGTTCAAA GTTGAAGCGA ACGTAGGTGC TCCTCAAGTA      2160

TCTTACCGTG AAACATTCCG CGCTTCTACT CAAGCACGTG GATTCTTCAA ACGTCAGTCT      2220

GGTGGTAAAG GTCAATTCGG TGATGTATGG ATTGAATTTA CTCCAAACGA AGAAGGTAAA      2280

GGATTCGAAT TCGAAAACGC AATCGTCGGT GGTGTGGTTC CTCGTGAATT TATCCCAGCG      2340

GTTGAAAAAG GTTTGGTAGA ATCTATGGCT AACGGTGTTC TTGCAGGTTA CCCAATGGTT      2400

GACGTTAAAG CTAAGCTTTA TGATGGTTCA TATCACGATG TCGACTCATC TGAAACTGCC      2460

TTCAAGATTG CGGCTTCACT TTCCCTTAAA GAAGCTGCTA AATCAGCACA ACCAGCTATC      2520

CTTGAACCAA TGATGCTTGT AACAATCACT GTTCCAGAAG AAAACCTTGG TGATGTTATG      2580

GGTCACGTAA CTGCTCGTCG TGGACGTGTA GATGGTATGG AAGCACACGG TAACAGCCAA      2640

ATCGTTCGTG CTTACGTTCC ACTTGCTGAA ATGTTCGGTT ACGCAACAGT TCTTCGTTCT      2700

GCATCTCAAG GACGTGGTAC ATTCATGATG GTATTTGACC ACTACGAAGA TGTACCTAAG      2760

TCAGTACAAG AAGAAATTAT TAAGAAAAAT AAAGGTGAAG ACTAATCCGT CCTCACTCTA      2820

GAAGGAAGTC ACTTAGTGGC TTCCTTTTGT CTTTAGAAAA TACCTCTAAA TATGGTAAAA      2880

TAGTAGAAGA ATAATGTGAG GAAAATGAAT GTCAAATAGT TTTGAAATTT TGATGAATCA      2940

ATTGGGGATG CCTGCTGAAA TGAGACAGGC TCCTGCTTTA GCACAGGCCA ATATTGAGCG      3000

AGTTGTGGTT CATAAAATTA GTAAGGTATG GGAGTTTCAT TTCGTATTTT CTAATATTTT      3060

ACCGATTGAA ATCTTTTTAG AATTAAAGAA AGGTTTGAGC GAAGAATTTT CTAAGACAGG      3120

CAATAAAGCT GTTTTTGAAA TTAAGGCTCG GTCTCAAGAA TTTTCAAATC AGCTCTTGCA      3180
```

639

```
GTCCTACTAT AGGGAGGCTT TCTCTGAAGG TCCATGTGCT AGTCAAGGTT TTAAGTCCCT      3240

TTATCAAAAT TTGCAAGTTC GTGCTGAGGG TAATCAGCTA TTTATTGAAG GATCTGAAGC      3300

GATTGATAAG GAACATTTTA AGAAGAATCA TCTTCCTAAT TTAGCCAAAC AACTTGAAAA      3360

GTTTGGTTTT CCAACTTTTA ACTGTCAAGT CGAGAAGAAT GATGTCCTGA CCCAAGAGCA      3420

GGAAGAGGCC TTTCATGCTG AAAATGAGCA GATTGTTCAA GCTGCCAATG AGGAAGCGCT      3480

CCGTGCTATG GAACAACTGG AGCAGATGGC ACCTCCTCCA GCGGAAGAGA AACCAGCCTT      3540

TGATTTTCAA GCGAAAAAAG CTGCAGCTAA ACCCAAGCTG GATAAGGCGG AGATTACTCC      3600

TATGATCGAA GTGACGACAG AGGAAAATCG TCTGGTATTT GAAGGGGGTTG TTTTTGATGT      3660

GGAGCAAAAA GTGACTAGAA CAGGTCGTGT TTTAATCAAC TTTAAAATGA CGGACTATAC      3720

TTCAAGTTTT TCTATGCAAA AGTGGGTTAA AAACGAGGAA GAGGCCCAGA AGTTTGACCT      3780

CATCAAGAAG AATTCTTGGC TCCGAGTTCG AGGGAATGTG GAGATGAATA ACTTCACACG      3840

CGATTTGACT ATGAACGTAC AGGATCTGCA GGAAGTTGTT CACTATGAGC GGAAGGATTT      3900

GATGCCAGAA GGTGAGCGTC GGGTTGAGTT TCATGCTCAT ACTAACATGT CGACTATGGA      3960

TGCTTTGCCA GAGGTCGAAG AGATTGTTGC AACAGCTGCT AAGTGGGGAC ACAAGGCGGT      4020

TGCTATCACG GACCATGGGA ATGTCCAGTC CTTTCCACAT GGCTATAAGG CGGCTAAGAA      4080

AGCGGGAATC CAGCTGATCT ATGGGATGGA AGCCAATATC GTGGAGGACC GTGTCCCTAT      4140

CGTCTATAAC GAAGTGGAGA TGGACTTGTC AGAAGCAACC TACGTGGTCT TTGACGTGGA      4200

AACGACGGGA CTTTCAGCTA TCTATAATGA CTTGATTCAG GTTGCGGCTT CTAAGATGTA      4260

CAAGGGGAAT GTTATTGCTG AATTTGATGA ATTTATCAAT CCTGGGCATC CCTTGTCAGC      4320

CTTTACTACA GAGTTAACTG GAATTACAGA TGATCATGTC AAAAATGCCA AACCACTAGA      4380

ACAAGTTTTG CAAGAATTCC AAGAATTTTG CAAGGATACG GTCCTAGTTG CCCACAATGC      4440

TACCTTTGAC GTTGGCTTTA TGAATGCTAA TTATGAGCGG CATGATCTTC CAAAGATTAG      4500

TCAGCCAGTT ATTGATACGC TGGAGTTTGC TAGAAACCTC TATCCTGAGT ATAAACGCCA      4560

TGGTTTGGGG CCTTTGACCA AGCGTTTTGG TGTGGCCTTG GAACATCACC ACATGGCCAA      4620

CTACGATGCG GAAGCGACTG GTCGTCTGCT TTTCATCTTT ATCAAAGAGG TAGCAGAAAA      4680

ACATGGTGTG ACCGATTTAG CTAGACTCAA CATTGATCTA ATCAGTCCAG ATTCTTACAA      4740

AAAAGCTCGG ATCAAGCATG CGACCATCTA TGTCAAGAAT CAGGTAGGTC TAAAAAATAT      4800

CTTTAAGCTG GTTTCCTTGT CTAATACCAA GTATTTTGAA GGAGTGCCAC GGATTCCGAG      4860

AACGGTTCTA GATGCCCATC GAGAGGGCTT GATTTTAGGT TCAGCCTGTT CAGAGGGTGA      4920
```

```
                                         640
AGTTTTTGAC GTGGTCGTTT CTCAAGGTGT GGATGCGGCG GTTGAGGTGG CCAAGTATTA    4980

TGATTTTATC GAGGTCATGC CACCGGCTAT CTATGCACCC TTGATTGCCA AAGAGCAGGT    5040

CAAGGATATG GAGGAACTCC AGACCATTAT CAAGAGTTTG ATAGAGGTTG GAGACCGCCT    5100

TGGCAAGCCT GTTCTGGCTA CGGGAAATGT TCACTATATC GAACCGGAAG AAGAGATTTA    5160

TCGTGAAATT ATCGTCCGTA GTTTGGGACA GGGTGCGATG ATTAATCGAA CTATCGGTCA    5220

TGGTGAACAT GCCCAACCAG CACCACTTCC AAAGGCTCAT TTTCGAACGA CTAATGAGAT    5280

GTTGGATGAA TTTGCCTTTT TGGGAGAGGA ACTGGCTCGT AAACTGGTTA TTGAAAACAC    5340

CAATGCCTTG GCAGAAATAT TTGAATCCGT TGAAGTCGTT AAGGGTGACT TGTATACGCC    5400

TTTCATCGAC AAGGCTGAAG AAACAGTTGC TGAGTTGACC TATAAGAAAG CTTTTGAGAT    5460

TTATGGAAAT CCGCTGCCAG ATATTGTTGA TTTGCGGATT GAAAAAGAAT TAACATCCAT    5520

ACTGGGGAAT GGATTTGCTG TGATTTATCT GGCATCGCAG ATGCTGGTGC AACGTTCTAA    5580

TGAACGGGGT TATTTGGTTG GTTCTCGTGG GTCTGTCGGA TCTAGTTTCG TTGCGACCAT    5640

GATTGGGATT ACGGAGGTCA ATCCTCTCTC TCCTCACTAT GTCTGTGGTC AGTGTCAGTA    5700

CAGTGAGTTT ATCACAGATG GTTCGTACGG TTCAGGATTT GATATGCCCC ATAAGGACTG    5760

TCCAAACTGT GGTCACAAAC TCAGTAAAAA CGGACAGGAT ATTCCGTTTG AGACCTTCCT    5820

TGGTTTTGAT GGGGATAAGG TTCCTGATAT TGACTTGAAC TTCTCGGGAG AAGATCAGCC    5880

TAGCGCCCAC TTGGATGTGC GTGATATCTT TGGTGAAGAA TATGCCTTCC GTGCGGGAAC    5940

GGTTGGTACG GTAGCTGCCA AGACTGCCTA TGGATTTGTC AAAGGTTACG AGCGAGATTA    6000

TGGCAAGTTT TATCGTGATG CAGAAGTAGA ACGCCTCGCT CAAGGAGCGG CGGGTGTCAA    6060

GCGGACAACA GGCCAACACC CGGGGGGGAAT CGTTGTTATT CCGAACTACA TGGATGTCTA    6120

CGATTTTACG CCTGTCCAGT ATCCAGCAGA TGATGTCACG GCTGAATGGC AGACCACTCA    6180

CTTTAACTTC CACGATATCG ATGAGAACGT CCTCAAACTC GATGTACTGG GACATGATGA    6240

TCCGACTATG ATTCGAAAAC TTCAGGATTT GTCTGGTATT GACCCTAATA AAATTCCTAT    6300

GGATGACGAA GGCGTGATGG CACTCTTTTC TGGGACTGAT GTGCTAGGGG TAACACCTGA    6360

ACAAATTGGA ACGCCTACGG GTATGTTGGG GATTCCAGAG TTTGGAACAA ATTTCGTACG    6420

TGGAATGGTA GACGAAACCC ATCCGACAAC CTTTGCGGAA TTGCTTCAGC TGTCTGGTCT    6480

GTCCCACGGT ACTGATGTTT GGTTGGGGAA TGCTCAGGAT CTGATTAAGC AAGGAATAGC    6540

GGACCTATCG ACTGTTATCG GTTGTCGGGA CGACATCATG GTTTACCTCA TGCATGCGGG    6600

TCTGGAACCT AAGATGGCCT TTACCATTAT GGAACGGGTA CGTAAGGGTT TGTGGCTAAA    6660

GATTTCAGAA GAGGAGAGAA ATGGCTATAT CGAAGCAATG AAGGCTAATA AGGTGCCAGA    6720
```

641

```
GTGGTATATC GAATCCTGTG GGAAAATTAA GTACATGTTC CCTAAGGCCC ATGCGGCAGC      6780

CTACGTTATG ATGGCCTTGC GTGTAGCTTA CTTCAAGGTT CACCATCCTA TTTATTACTA      6840

CTGTGCTTAC TTCTCCATTC GTGCTAAGGC TTTTGATATC AAGACCATGG GTGCGGGCTT      6900

GGAGGTCATC AAGCGCAGAA TGGAAGAAAT CTCTGAAAAA CGGAAGAACA ATGAAGCCTC      6960

TAATGTGGAA ATCGATCTCT ATACAACTCT TGAGATTGTC AATGAGATGT GGGAACGAGG      7020

TTTCAAGTTT GGTAAATTAG ATCTCTACTG TAGTCAGGCG ACAGAGTTCC TCATCGACGG      7080

GGATACCCTT ATCCCACCAT TTGTAGCAAT GGATGGTCTG GGAGAGAACG TTGCCAAGCA      7140

ACTGGTGCGG GCGCGTGAAG AGGGAGAATT CCTCTCTAAA ACAGAACTAC GCAAGCGTGG      7200

TGGACTCTCA TCAACCTTGG TTGAAAAGAT GGATGAGATG GGTATTCTTG GAAATATGCC      7260

AGAGGATAAC CAGTTGAGTT TGTTTGATGA GTTGTTTTAA AAAATTGCTT AATAATCTAT      7320

TAAAAGAGGC TAACGTATAT CCAATAGATT TACATTAGCT TTCTTTTTTG TTAAAATAGT      7380

CTATGGAAAG AGGGTGAGAG TATGTCAAAG ATGAGTATAA GCATCCGTCT GGATAGTGAG      7440

GTTAAGGAGC AGGCCCAACA GGTGTTTAGT AATCTGGGAA TGGATATGAC AACAGCTATT      7500

AATATTTTCC TTCGTCAGGC AATTCAATAT CAGGGATTAC CTTTTGATGT TAGACTAGAC      7560

GAAAATCGGA AGTTGCTCCA AGCGTTAACG GATTTAGACC AAAATCGTAA TATGAGCCAG      7620

TCTTTTGAAT CAGTCTCAGA TTTGATGGAG GACTTACGTG CTTAAGATTC GTTATCATAA      7680

ACAGTTTAAA AAAGATTTTA AGTTGGCTAT GAAGCGTGGT TTGAAGGCAG AATTATTAGA      7740

AGAAGTTTTG AATTTTCTGG TTCAAGAAAA AGAACATCCT GCCAGAAATC GTGATCATTC      7800

ATTGACGGCA TCCAAGCATT TTCAAGGAGT TCGTGAATGC CATACCCAGC CAGATTGGCT      7860

TTTGGTTTAT AAAGTAGACA AGTCGGAATT GATTTTAAAT TTGCTGAGGA CAGGCAGTCA      7920

CAGTGATTTA TTTTAATCTA TTTTAAGGGG GTTCTCATGA AACTAAGAAT ATTTGCGGAA      7980

GATAAGCCGG CTAAGAAGGT ATTTGAATAT CAATTAGAAC TTGCTGATCG TACAATTCTT      8040

CTATCGACAG CACTCTTGTC AGGTGCTATT GCTTTAGCAG GAATCTTTTC TGCTTTGAAA      8100

GAAAAATAAA AATAGAAAAG AGAAAACAGA ATGGTTTTAC CAAATTTTAA AGAAAATCTA      8160

GAAAAATATG CGAAATTGTT GGTTGCGAAC GGAATTAACG TGCAACCTGG TCACACTTTG      8220

GCTCTCTCTA TTGATGTGGA GCAACGTGAA TTGGCACATC TAATCGTGAA AGAAGCTTAT      8280

GCCTTGGGTG CGCATGAGGT CATCGTTCAG TGGACAGATG ATGTGATTAA CCGTGAGAAA      8340

TTCCTCCATG CCCCGATGGA GCGTTTGGAC AATGTGCCAG AATACAAGAT TGCTGAGATG      8400

AACTATCTCT TGGAGAATAA GGCTAGCCGT CTTGGAGTTC GTTCATCTGA TCCAGGTGCC      8460
```

642

```
TTGAACGGAG TGGACGCTGA CAAGCTTTCA GCTTCTGCTA AAGCTATGGG ACTTGCCATG       8520

AAGCCTATGC GTATCGCAAC TCAATCTAAC AAGGTTAGCT GGACTGTAGC AGCTGCAGCA       8580

GGACTTGAGT GGGCTAAGAA AGTCTTCCCA AATGCTGCGA GCGACGAAGA AGCAGTTGAT       8640

TTCCTTTGGG ACCAAATTTT CAAAACTTGC CGTGTCTACG AAGCAGATCC TGTTAAGGCT       8700

TGGGAGGAAC ATGCAGCCAT TCTCAAGAGC AAGGCCGATA TGCTTAATAA GGAGCAATTT       8760

TCAGCCCTTC ACTACACAGC GCCAGGAACA GATTTAACAC TTGGTTTGCC AAAGAACCAC       8820

GTTTGGGAAT CAGCTGGTGC TGTCAATGCA CAGGGCGAAG AATTCTTGCC AAATATGCCA       8880

ACAGAAGAGG TCTTCACAGC GCCTGACTTC CGTCGTGCAG ATGGTTATGT CACTTCTACA       8940

AAACCGCTTA GCTACAACGG AAATATCATT GAAGGCATTA AGGTGACCTT TAAGGATGGA       9000

CAAATCGTAG ATATCACTGC TGAGAAGGGT GATCAGGTTA TGAAAGACCT TGTCTTTGAA       9060

AATGCGGGTG CGCGTGCCTT GGGTGAATGT GCCTTGGTAC CAGATCCAAG TCCAATTTCT       9120

CAGTCAGGCA TTACCTTCTT TAACACCCTT TTCGATGAAA ATGCGTCAAA CCACTTGGCT       9180

ATCGGTGCAG CCTATGCGAC TAGCGTTGTT GATGGAGCGG AGATGAGCGA AGAGGAGCTT       9240

GAAGCTGCAG GGCTTAACCG TTCAGATGTT CACGTAGACT TTATGATTGG TTCTAACCAA       9300

ATGGATATCG ATGGTATTCG TGAGGATGGA ACGCGGGTAC CTCTTTTCCG TAATGGGAAT       9360

TGGGCAAATT AAGGAGATAA TATGTTAGGA AGTATGTTCG TTGGTCTCCT AGTGGGATTT       9420

TTAGCAGGTG CTATGACCAA TCGTGGAGAG CGAATGGGAT GTTTTGGAAA AATGTTTCTC       9480

GGTTGGATCG GAGCCTTTCT AGGTCACTTG CTCTTTGGAA CTTGGGGGCC AGTTTTATCA       9540

GGAACAGCTA TTATCCCAGC GATTTTAGGA GCCATGATTG TTTTAGCTAT TTTTTGGAGA       9600

CGAGGAA                                                                 9607
```

(2) INFORMATION FOR SEQ ID NO: 81:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14231 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

```
CTACAAGATA ATTCCAGCTA TAACATCCGC TATAATAGTA AGAGCGAGCT CTATGATAAG        60

GCTCATTAGT TTCACCTCCT CTCACGAACC CATAGGAACG TAATCGGTAA CCGATGACAA       120

AAATAGTATA CCACAATACA TTTAGATCAT CAAGGTCACT TAATTCTTGA AATATCAGAT       180

CTAAGAGAAA AATCTTTAAA ATCAGAAAAA CGCATAATAT CAGGTGTGCA AAAACTTGAT       240
```

643

```
ACTATGCGTT TTATTGTGGG AAGGTTTACT CCATTTTCTC CTGAAATTGA GTTTTTGTCC      300

AGCCTCTGTT TTTAGGGTTG CTAAGAAAAT AATGTCATGT GGTGAATATT TGTAAATCAG      360

TCAGCAGACA GAACGATACT CTTCGAAAAT CTCTTCACAT CATGTCAGCT TCGTCTTTCC      420

GTATATATGT GACTGACTTC ATCAGTTCTA TCTACAACCT CAAAACAGTG TTTCGAGCTG      480

ACTTGATCAA TTTTCAAATC TGTACTTTGA GCAAGCTGAG ACTAGCTTCC TATTTGATTT      540

TCATTGAATA TCAGAAACCC ATTCTCCATC AAATAATTCG ACTGCGTCTA ATAATTTTTG      600

ATCTGGCACG GTGTCTGAAA TAAAGGTTGT GTATTTGGAG AGGGGATTAA TTTTAAAAAA      660

TCCAGTCTTG TAAAATTTAG AACTATCAAT CAGTAAGATG GTTTCATGGG CTTTGTCAAT      720

AATATTCTTT TTTGAAATAG CTTGGCTGAG AGAAGCTTCA TAAACATATT GGTCATCAAT      780

ACCTCTTGCT GAACAAAATG CTAAATCGAT ATTAAAATGA TCTAATAAAG AATTTTCCTT      840

ATCATAGTTG ACCACGGAAC AGGATTGATG TTTGACCTCG CCAGATGTGA TAAAGATTTT      900

GGAGCTATCT TTAACAGTTT CAGATAGGGT TTGTGCAGTA TGTAAACCAT TTGTAAAAAT      960

AATCAAATTA TCAAGTTCAG AAAGATAGGG ACAGAGTTCG TAGACAGTAG TACTAGAATC     1020

TAGATAGATA CACATACCAG ACCGAATAAA GTCTTTAGCG AGACTAGCGA TTAGTCTTTT     1080

TTGCCTAGTA CTTTCTCCTT CACGTATTTG ATGAGAAAGT TCAATTGTGT TCATAGAGGA     1140

CAGGGTCACG TATCCGTGCT TTCTTTTGAT AAGACCTTGA TTTTCTAAGA AAATTAAATC     1200

ACGACGTAAG GTACTTGTGC TCCAGAAAGT GATTTCTGCC AGCTCTTTTA CGGCAATTCT     1260

TTTTTTCTTT TTGATAATTT CAATCAATTC AAGTACACGT TCATCTTTTA TCATAAGCTC     1320

CTCCTAATTT ATCATTTCAA CTATATTATA GCACAAATTG GAGGAATTTG AATTATTTTT     1380

ATGAATATTG GGTTAACATT TGAACATTAT TCAAGTAAGC GTTCACATAT TGAAAAAATA     1440

AAACGTGGGG ATTATAATAA AGTTAATCmA GGACGAAGAG AGAAGAAAAA TGGAAGCGGT     1500

TTTAGCAATA GATTTAGGTG CGACTTCTGG AAGAGCAATC GTTGGTTACC TTTCTGAAAA     1560

TAAACTAGTA ATGGAAGAAA TAAATCGCTT TTCTAATCTA CCTATTAGAG TAAAAGGGCA     1620

TTTATCTTGG GATATTGACT TTCTACTAGC TAAAATTCTT GAAAGTATCC GCTTGGCTAA     1680

TACTAGTTAC AAGATTTTAT CTATCGGTAT TGACACATGG GGAGTTGATT TTGGACTGAT     1740

TGATAATGAA GGTAAGCTGT TATTACAACC TGTTCATTAT CGTGATGAAA GAACAAAGGG     1800

AGTGTTAAAG GAAATATCTG AAATGACTGA ATTAGAAAAA CTGTATTCAG AGACAGGAAA    .1860

TCAGATTATG GAGATAAATA CCTTGTTTCA ACTCTTTAAG GCACGTCAAG AATCTCCTGA     1920

CTCTTTCTAT AAGACCAATA AGATTCTTTT AATGCCAGAT TTGTTTAATT ATCTCTTGAC     1980
```

644

```
AGGTAAGTTT GCTACAGAAA AAAGCATTGC TTCAACAACT CAATTATTTG ATCCTAGGAG     2040

TCAAAATTGG AATCAGAATA TCTTAAAACT ATTTGAATTG GATTCATCTT TACTTCCTGA     2100

AATTGTTTCA GAGGGAAATG TTCTTGGAAG GATAAAAGAG GAGTATGGTT TAGGCGATAT     2160

TCCTGTTGTG AATGTTTGTA GTCATGATAC AGCAAGCGCG ATTGTCTCAG TACCTAAGAC     2220

AGAAGGTAGT TTATTTATTT CATCAGGTAC TTGGTCTTTG GTTGGAGTGG AACTTACTTC     2280

ACCGATTCTT ACTACCGAAT CCTTCAGTTA TGGATTTACA AATGAAGTCG GTAAAGATGG     2340

AGTGATTACA TTTCTGAAGA ATTGTACAGG GTTGTGGATC ATAGAGGAAC TAAGACGTTC     2400

ATTTGAACGA AGAGGGAAAG CCTATTCTTT TGATGATATT AGGACAATGG TGGAGAAAGA     2460

AAAAGAAAAT CTTCCTCTGA TTGATACTGA ATCAACTGAA TTTGCAACAG AATCTGATAT     2520

GCACAAGACT TTGACAGAAT ATCTAGCTTA TCATCATGAA ACTAGAGAGT GGACAGATGG     2580

ACAACTATTT AAGATTGTTT ATGAAAGCCT AGCTGAAACG TATAGGAAAG CGATAGAGTT     2640

ACTAGAAGAA CTAACTCATA AGGTTTATAA GAGGATATAT GTGATTGGAG GAGGTGCTAG     2700

AGCCAGTTAC TTTAACCAAA TGATTGCTGA TAGAACTGGT AAAGAGGTTC TTACAGGTTT     2760

GACTGAGGCT ACAGCTGTGG GGAATATTGT TGTGCAGCTC ATAGCTATGG GACAATTAAA     2820

AGGGATGGAA GAGGCTCACC ATGTTATTGA GGAGTTTCTA CAATTAGAGA GTTATTACTC     2880

CCAAAAGAAT TAAAAAGATT GAGAGTTTGT AAATTTGCCT CCCTCCCCCT TCTTAGCTTT     2940

TGTGCAGGAA GGGGGGATAA TTGGTGAATT GAAAAATATT TAGTGTTTTG ATATGAGGAG     3000

GACAAGGATG TCAGATGTAA AACAAGAATT AATTAAATAT GGTAAGAAGC TAGTAGAAAC     3060

AGATTTGACG AAAGGAACAG GTGGGAATCT CAGCGTTTTC GATCGTGAAA AACAATTGAT     3120

GGCAATTACC CCGTCGGGTA TTGATTTCTT TGAAATCAAA GAATCCGATA TTGTAGTGAT     3180

GGATATTAAT GGAAATGTTG TAGAGGGAGA ACGCTTGCCA TCTAGCGAAT GGTATATGCA     3240

TTTGATTCAA TATCAAACTC GTGATGATAT CGATGCAATT ATCCATGCTC ATACAACTTA     3300

TGCAACAGTA TTAGCTTGTC TCAGAGAACC ACTTCCAGCG AGTCATTATA TGATTGCAGT     3360

GGCAGGGAAA GATGTTCGGG TAGCTGAGTA TGCAACATAT GGCACGAAAG AATTGGCTGT     3420

GAATGCAGCT AAAGCAATGG AAGGTCGTAG AGCAGTTTTA CTAGCGAATC ATGGAATTTT     3480

AGCAGGTGCA CAAAATTTAT TGAATGCATT TAATATTGTT GAAGAAGTTG AATATTGTGC     3540

AAAAATTTAT TGTTTAGCTA AGAATTTTGG AGAGCCAGTA GTTCTTCCTG ATGAGGAGAT     3600

GGAATTGATG GCAGAAAAAT TTAAAACATA CGGTCAGAGA AAATAGGGAG GATATTAATG     3660

TTAAAACATA TACCGAAAAA TATTTCTCCA GATTTATTGA AGACTTTAAT GGAAATGGGA     3720

CATGGAGATG AAATAGTATT AGCTGACGCG AATTATCCTT CTGCCTCATG TGCAAATAAG     3780
```

645

```
CTAATTCGTT GTGATGGTGT AAATATTCCA GAATTATTAG ATTCCATTCT GTATTTAATG    3840

CCATTAGATA GTTACGTCGA TAGTTCAATT CAGTTTATGA ACGTTGTTTC GGGTGATGAT    3900

ATTCCTAAGA TATGGGGTAC CTATAGACAG ATGATTGAAG GTCATGGTAC AGATCTTAAA    3960

ACGATTACTT ATCTTAGAAG AGAAGACTTT TATGAACGTA GTAAGAAAGC TTATGCTATT    4020

GTTGCTACAG GAGAAACTTC ACTTTATGCT AATATTATCC TTAAGAAAGG AGTAGTTGTT    4080

GAAAGAGAAA ATGTTCAATA GAGGAATTTT AGTTGCCAGT CATGGTAATT TTGCTAGCGG    4140

AGCTCTCATG ACCGCAGAAA TGTTTGTTGG TGAGACAACA AATGATAGAG TTAGGACATT    4200

AGGTTTGATG CCTGGAGAGA ATATTGTAGA GTTTGAGCAT TATTTTAAAA ATCAAGTGGA    4260

TGAACTGTTA GACTCAAATC AAGAGGTTAT CGTTTTGACT GACTTGATTG GAGGAAGTCC    4320

TAATAATGTG GCTTTGTCAC GGTTTTTAAA TTTGGATTCA GTTGATATTG TAACAGGGTT    4380

TAATATCCCT CTCCTAGTGG AATTAATATC AAGTTATGAT TCAAAAATCA ATTTAGAAGA    4440

AATTGTTCAC AATGCTCAAA ATAGTTTGTT TAATGTTAAA CAACAACTTA ACGTAGAGGA    4500

GGAAGAAGAT TTATGTCTAT AGAGTTTGTT CGTATTGATG ACCGTCTGGT ACATGGTCAA    4560

GTTGTCACTA CGTGGCTAAA AAAGTATGAT ATTGAGCAAG TTATCATTGT TAATGATCGC    4620

ATCTCAGAAG ATAAAACACG ACAATCTATT TTAAAGATTT CTGCACCGGT AGGTTTAAAA   . 4680

ATTGTTTTCT TTAGTGTAAA ACGGTTTGTG GAAGTTTTAA ACTCTGTGCC AATAAAAAAG    4740

AGAACAATGC TGATATATAC AAATCCAAAA GATGTGTATG ATTCTATTGA AGGAAATTTA    4800

AAATTGGAGT ACCTCAATGT AGGACAGATG AGTAAAACGG AGGAAAATGA AAAGGTAACG    4860

GGAGGTGTAG CTCTAGGTGA AGAAGACAAA TATTATTTTA AGAAAATAGT TGATAAGGGA    4920

ACGAGAGTTG AAAATTCAAAT GGTTCCTAAT GATAAAGTTA CAATGTTGGA AAAATTTTTA    4980

TAAAAATAAT TTAAGGAGGT ACAGTATATG CTATTCACAC AAGCATTACT GGTGACATTA    5040

GTTGGGATTA TTGCCACTAT TGACTATAAT GGACCGTTAT TTATGATTCA CCGTCCGTTA    5100

GTTACAAGTG CAATGGTTGG CTTAGTATTA GGAGATTTCA CCCAAGGTGT TCTTATTGGT    5160

TCAGCTCTTG AATTAACTTG GCTCGGTGTA ACAGGTATTG GAGGTTATAC TCCACCAGAT    5220

ACTATTTCAG GTGCGATTAT TGGTACTGCA TTTGGTATTT TATCTGGTCA AGGAGAAACT    5280

GCTGGTATCG CTATAGCAGT TCCAATTGCA GTTGCTACCC AACAGTTGGA TGTTCTTGCA    5340

AAAACTTTAG ATGTTTATTT TGTGAAAAAA GCTGATAATG ATGCTAAAAA CGGAGATTAT    5400

TCAAAGATCG GTTTTTATCA TTATTCAAGT TTGGTTTTTA TCACGTTATT TAAAATTGTA    5460

CCAATTTTCC TAGCTATTAT GCTTGGAGGG GAATATGTGG CAGACTTGTT TGCTAAGGTT    5520
```

646

```
CCACCAATCG TTATGCAGGG ACTTAACTCT GCAGGTGCTT TACTACCTTC AATTGGTTTT     5580

GGTATGCTTT TAAATATGAT GCTCAAGAAA AATATGTGGG TATTCTTGTT GATTGGATTC     5640

ATTTGTTCTG TGTATGGAGG AATGTCAACC ATTGGGATCT CACTAGTTGG TATTGCGGTA     5700

GCATACTTCT ACGATATGAT TGGAAGCAAA CCACAAGAAA CAACTTCAAG TAGTGATGTT     5760

GAGGAGGATC TTGATCTATG ATGAATAATA AAGTAACTAA AGTTGAACTT AAAAAAGTTT     5820

TCAAACGAAG TTTTATGTAT GGTTCTTCAT GGAACTATGA GAGAATGCAG AACCTAGGTT     5880

TTCTATATAC AATTCTTCCA GTATTGAAAA AACTATACCC AGACAAAGAT TCAGCTTCTC     5940

CTGCAATGAA ACGTCACCTT GAGTTTTTCA ATACTCATCA AACAGCGGCA CCATTTATTC     6000

TTGGAGTTAC TTCCGCTATG GAAGAACAAG AAGGAAATGA AGGTGCAGCT TCAATTACTG     6060

GTATTAAAGT TGGCTTGATG GGGCCACTGG CTGGTCTAGG AGATAGTTTG TTCTGGCTGA     6120

CACTAGTTCC TATCTGTTTT AGTATTGGTG CGTCTTATTC TAAAGACGGC GGTGCTTTAG     6180

GTATCTTTAT CGCCTTAATA TTGTTTAATA TTATTAATAT TCCTGTTAAA TATTTCGGTT     6240

TGAAATATGG GTATACTAAG GGTTCTAGTC TTATCCAAGA AAATAATACA AAAGGAACAT     6300

TGAATCGCGT TACGAGTATG GCGACAGCAT TAGGGCTAGT ACTAGTGGGT GGTTTGATTC     6360

CATCAATGGT TGGTATTAAT TTTGGATTAG AATTTAAGCA GGGGGAACTT GTTATTTCTG     6420

TTCAAGAAAT GATTACAAAA TTAATTCCAG GATTTATCCC TATGGCTTTG ACTTTATTAA     6480

TGTGTAAATT AATTAGAAAA GGAAAGAATC CGGTTGTACT AATCTTTAGT GTTATGGCTA     6540

TTGGAGTTAT TCTAGTTGTT TTAGGAATTT TGAAGTAGTA GAAAGTGTGG AGGTGGTATT     6600

TGGGATATCA CCTCCATTTT GGAAGAGAGG TAAAGAGTGA AATTATGGTA TAAGAAAGCT     6660

GCCGCAAATT GGAATGAAGC CTTGCCGATT GGGAACGGTC ATTTAGGTGG TATGATTTAT     6720

GGTTCAGCTA CAAAAGAATG TATTCAACTA AACGATGAGA CTATTTGGTA TAGAGGAAAG     6780

TCAGATAGAA ATAATCCAGA CTCACTATTG CATCTTAAAA AAATTCGGGA ATATCTTTTA     6840

GATGGAGAAA TTCAGAAAGC CGAAGAATTG ATAAAGTTAA CAGTGTTTGC TACCCCAAGA     6900

GATCAAAGCC ACTATGAATT ACTTGGGGAA CTTTACATTG AGCATATAGA TATTCAGTCT     6960

TGTGCTCTTT CATTGTATGA AAGAGAGCTA GATTTAGATA CAGCTATTTC TAATGTTGTG     7020

TTTGAGCCTA ATAGTTGTAA TTTACAAATA AAAAGAGAAT ATTTTACGAG TTTTAATAAG     7080

AATATTTTAT GTTGCCGTAT AGTGTCATCA GTTCAAAACA CATTAAATTT AAACATTAAT     7140

TTGGGTAGAA ATAAACGGTT TAATGACGAA GTATCTAAAC TGGATTCAAG TACAATTTTA     7200

ATGTCGGCCT CTGCTGGAGG TAGAAAAGGT GTTCAGTTTA AAGTAGTATG TCATTCTAAG     7260

GTTACGGATG GTGAAGTAAG TGTATTGGGA GAGACAATAG TTATTCGGAA TGCTACAGAG     7320
```

647

```
GTATTTCTTT ATCTCAAATC AATGACGGAT TATTGGGGAA ATATAGATAT TTCTTCTCTT      7380

CAGGGAGAAT TTAGTAGTAT TGATTACTTT ACAGAAAAAG ATGAACATGT AAAAAAATAT      7440

CAGGAGCAAT TTAATAGAGT TGATTTTAAA CTAGACTATA GTAAAGGTTG TCTTAGCATT      7500

CCAACGAATC TACTTCTTGA AAACACTAAA AAGTATAGTA ACTACTTGAC TAACTTGTTA      7560

TTTCATTATG GAAGATATCT GTTAATATCG TCTAGTCAAC CGAATGGTTT ACCTGCCAAT      7620

CTTCAAGGAA TATGGTGTGA TGAATTAAAT CCAATTTGGG GTTCTAAATA TACGATTAAT      7680

ATTAATACTC AAATGAATTA TTGGATGGTA GGTCCATGTG ATTTACCAGA AGTAGAATAT      7740

CCATTATTTG ATATGCTCGA AAGAATGAGA GAACCGGGAA GACTAACCGC TAAGAAAATG      7800

TATGGAGCTA GAGGTTTTAC AGCACATCAT AATACGGATG GTTTTGGCGA TACGGCTCCC      7860

CAATCTCATG CCATGGGGGC TGCAATTTGG GTATTAACTA TTCCATGGTT ATGTACTCAT      7920

ATTTGGGAAC ACTATTTATA TTTCCAAGAT GAGCGTATTC TTACGGAACA TTTTGAAATG      7980

ATAAAAGAAG CATTTCTTTT CTTTGAAGAT TATTTATTTG AGGTGGATGG CTACTTGATG      8040

ACAGGTCCAA GTGTCTCACC GGAAAATAAA TATCGCTTAA AAAATGGTAT TGAAGGAAAT      8100

GCTTGTCTAT CATCTACAAT TGATAATCAA ATTCTAAGAT ATTTTTGTGA TTCATGCATT      8160

GGCATTGCAA AACAATTAGG AGACAATTCG GATTTTATTA GTCGTGTGAA GGAGTTAAAA      8220

AAGAAACTAC CTAAAACAAA AATAGGTAGT AATGGGCAAA TCCAAGAATG GTTAGAAGAT      8280

TATGAAGAAG TAGAGCCTGG GCATAGACAC ATTTCACCTC TATTTGGGCT TTATCCTTAT      8340

AATGAGATTG ATATTCATAA AACTCCGGAA TTAGCAGAAG CAGCTAAAAT CACTATCAAT      8400

AGGAGATTAT CAAACGCTAA TTTTTTATCT TCACAGGAGA GGGAGCAAGC GATTAATAAT      8460

TGGTTAGTAA GTGGTTTGCA TGCTAGTACA CAAACAGGTT GGAGTGCTGC ATGGCTGATT      8520

CATTTTTTTG CGAGACTATA TCAAGGTGAA CCTGCTTATA ACCAGATTAA TGGTTTGTTA      8580

AATAATGCGA CTCTTGGCAA TTTATTTCTT GACCATCCAC CATTTCAAAT TGATGGTAAT      8640

TTAGGTTTGG TGAGTGGAAT TTGTGAATTA TTAGTACAGA GCCATCATAA TTGGTTATCA      8700

CTAATTCCAG CTTTACCTTC TGCTTGGTCA GAAGGAGAAG TGAAAGGTTT CAGAGTAAGA      8760

GGAGGATATA AGGTATCGTT TGCTTGGAAA AATGGGGATA TAACATTCCT AAAAATTGGAA     8820

GGAGGAAACA AAGATCAAAA AGTAAGAGTA AGAATATATG GCAAAAATAC TGATGTACAA      8880

AATATTGAAT TGGTATTTAA TTCAGAAAAA ATTATTGAGT TAAATTTTTA GGTATAAGTC      8940

ATGAATAAAG AAAAAATAAA AAGAAAATTA ATCACAATAT TGTTTGTATG TATTGGGATG      9000

TTATGTTTTG GATTGTTAGC AGGAGTTAAG GCTGATAATC GTGTTCAAAT GAGAACGACG      9060
```

648

```
ATTAATAATG AATCGCCATT GTTGCTTTCT CCGTTGTATG GCAATGATAA TGGTAACGGA      9120

TTATGGTGGG GGAACACATT GAAGGGAGCA TGGGAAGCTA TTCCTGAAGA TGTAAAGCCA      9180

TATGCAGCGA TTGAACTTCA TCCTGCAAAA GTCTGTAAAC CAACAAGTTG TATTCCACGA      9240

GATACGAAAG AATTGAGAGA ATGGTATGTC AAGATGTTGG AGGAAGCTCA AAGTCTAAAC      9300

ATTCCAGTTT TCTTGGTTAT TATGTCGGCT GGAGAGCGTA ATACAGTTCC TCCAGAGTGG      9360

TTAGATGAAC AATTCCAAAA GTATAGTGTG TTAAAAGGTG TTTTAAATAT TGAGAATTAT      9420

TGGATTTACA ATAACCAGTT AGCTCCGCAT AGTGCTAAAT ATTTGGAAGT TTGTGCCAAA      9480

TATGGAGCGC ATTTTATCTG GCATGATCAT GAAAAATGGT TCTGGGAAAC TATTATGAAT      9540

GATCCGACAT TCTTTGAAGC GAGTCAAAAA TATCATAAAA ATTTGGTGTT GGCAACTAAA      9600

AATACGCCAA TAAGAGATGA TGCCGGGTACA GATTCTATCG TTAGTGGATT TTGGTTGAGT      9660

GGCTTATGTG ATAACTGGGG CTCATCAACA GATACATGGA AATGGTGGGA AAAACATTAT      9720

ACAAACACAT TTGAAACTGG AAGAGCTAGG GATATGAGAT CCTATGCATC GGAACCAGAA      9780

TCAATGATTG CTATGGAAAT GATGAATGTA TATACTGGGG GAGGCACAGT TTATAATTTC      9840

GAATGTGCCG CGTATACATT TATGACAAAT GATGTACCAA CTCCAGCATT TACTAAAGGT      9900

ATTATTCCTT TCTTTAGACA TGCTATACAA AATCCAGCTC CAAGTAAGGA AGAAGTTGTA      9960

AATAGAACAA AAGCTGTATT TTGGAATGGA GAAGGTAGGA TTAGTTCATT AAACGGATTT      10020

TATCAAGGAC TTTATTCGAA TGATGAAACA ATGCCTTTAT ATAATAATGG GAGATATCAT      10080

ATTCTTCCTG TAATACATGA GAAAATTGAT AAGGAAAAGA TTTCATCTAT ATTCCCTAAT      10140

GCAAAAATTT TGACTAAAAA TAGTGAGGAA TTGTCTAGTA AAGTCAACTA TTTAAACTCG      10200

CTTTATCCAA AACTTTATGA AGGAGATGGG TATGCTCAGC GTGTAGGTAA TTCCTGGTAT      10260

ATTTATAATA GTAATGCTAA TATCAATAAA AATCAGCAAG TAATGTTGCC TATGTATACT      10320

AATAATACAA AGTCGTTATC GTTAGATTTG ACGCCACATA CTTACGCTGT TGTTAAAGAA      10380

AATCCAAATA ATTTACATAT TTTATTGAAT AATTACAGGA CAGATAAGAC AGCTATGTGG      10440

GCATTATCAG GAAATTTTGA TGCATCAAAA AGTTGGAAGA AAGAAGAATT AGAGTTAGCG      10500

AACTGGATAA GCAAAAATTA TTCCATCAAT CCTGTAGATA ATGACTTTAG GACAACAACA      10560

CTTACATTAA AAGGGCATAC TGGTCATAAA CCTCAGATAA ATATAAGTGG CGATAAAAAT      10620

CATTATACTT ATACAGAAAA TTGGGATGAG AATACCCATG TTTATACCAT TACGGTTAAT      10680

CATAATGGAA TGGTAGAGAT GTCTATAAAT ACTGAGGGGA CAGGTCCAGT CTCTTTCCCA      10740

ACACCAGATA AATTTAATGA TGGTAATTTG AATATAGCAT ATGCAAAACC AACAACACAA      10800

AGTTCTGTAG ATTACAATGG AGACCCTAAT AGAGCTGTGG ATGGTAACAG AAATGGTAAT      10860
```

649

```
TTTAACTCTG GTTCGGTAAC ACACACTAGG GCAGATAATC CCTCTTGGTG GGAAGTCGAT    10920

TTGAAAAAAA TGGATAAAGT TGGGCTTGTT AAAATTTATA ATCGCACAGA TGCTGAGACT    10980

CAACGTCTAT CTAATTTTGA TGTGATTCTA TATGACAATA ATAGAAACGA AGTTGCTAAG    11040

AAACATGTTA ATAATTTGTC GGGTGAATCT GTTAGTCTAG ATTTCAAAGA AAAAGGAGCA    11100

AGGTATATTA AAGTTAAATT ACTAACGAGT GGAGTGCCTT TGAGTTTAGC AGAAGTAGAG    11160

GTTTTTAGAG AATCAGATGG TAAGCAATCT GAAGAGGATA TAGATAAAAT AACAGAAGAT    11220

AAAGTAGTCT CTACAAATAA GGTAGCTACT CAAAGTTCAA CCAATTATGA GGGTGTAGCT    11280

GCTTTAGCAG TTGATGGTAA TAAAGATGGA GATTACGGAC ATCATTCGGT GACTCATACT    11340

AAGGCAGATT CTAACGCTTG GTGGCAGGTC GATCTGGGAG AAGAGTTTAC GGTTTCTAAA    11400

GTTGATATTT ATAATAGAAC AGATGCCGAA CCTCAGCGTT TATCTAATTT TGATGTTATT    11460

TTTCTATCTT CATCAGGAGA AGAAGTTTTT AGAAGACATT TTGATAAAGT AGTTGATGGT    11520

TTGTTATCTT TAAAAGTACC TTCTGTAGGG GCTAAGCTAG TCAAAATAGA ATTAAAATCA    11580

GCAGCTATTC CGTTAAGTTT AGCGGAAGTT GAAGTCTATG GTTCAAAGAG AACTCCGAAG    11640

AAACTTTCTA ATATTGCATT AACAAAAGAA ACTCGACAGA GTTCAACGGA TTACAATGGT    11700

TTTTCTCGTC TAGCAGTTGA TGGAAATAAA AACGGAGATT ATGGTCATCA TTCAGTGACT    11760

CATACCAAAG AAGATTCTCC TTCATGGTGG GAGATAGATT TAGCACAAAC CGAAGAATTA    11820

GAAAAGTTAA TTATTTATAA TACAACAGAT GCTGAAATTC AGAGATTATC AAATTTTGAT    11880

ATTATTATAT ATGATTCAAA TGATTATGAA GTTTTTACAC AACATATTGA CAGTTTAGAA    11940

AGCAATAATC TATCCATAGA CTTAAAAGGA CTGAAGGGAA AAAAGGTTAG AATTTCTTTG    12000

AGAAGCGCAG GAATTCCTTT AAGTTTAGCA GAGGTAGAGG TTTATACTTA TAAGTAATTT    12060

TAAAAATTAT CACCCAGGCT ACCGTAAATA TAATGGAGAT GGTAGTATGA AAGAAACAGA    12120

AAAATAAGAG GAAAATAGTA TGATTCAACA TCCACGTATT GGGATTCGTC CGACTATTGA    12180

TGGTCGTCGT CAAGGTGTAC GCGAATCACT TGAAGTGCAA ACAATGAACA TGGCTAAAAG    12240

TGTGGCAGAT TTGATTTCAA GCACATTGAA ATATCCAGAT GGGGAACCTG TGGAATGCGT    12300

GATTTCTCCA TCTACTATTG GCCGTGTACC AGAGGCTGCA GCTTCCCATG AGTTGTTTAA    12360

AAAATCAAAT GTTTGCGCAA CAATTACAGT TACACCATGC TGGTGTTATG GTAGTGAAAC    12420

TATGGATATG TCTCCAGATA TTCCTCATGC TATTTGGGGA TTTAATGGGA CAGAACGCCC    12480

AGGAGCTGTC TATCTTGCAG CTGTACTAGC TTCACATGCT CAAAAAGGGA TTCCAGCCTT    12540

TGGGATTTAT GGAAGAGATG TTCAGGAAGC TAGTGACACA GATATTCCAG AAGATGTCAA    12600
```

```
                                    650
AGAAAAACTT TTACGCTATG CGCGTGCAGC TCTTGCAACT GGCTTGATGA GAGACACTGC      12660

TTACCTATCA ATGGGTAGTG TTTCGATGGG GATTGGTGGT TCTATTGTAA ATCCGGATTT      12720

CTTCCAAGAA TACTTAGGAA TGCGAAATGA ATCGGTAGAT ATGACGGAGT TCACGCGCCG      12780

TATGGACCGT GGTATTTACG ACCCTGAAGA GTTCGAACGT GCGCTCAAAT GGGTGAAAGA      12840

AAACGTAAAA GAAGGATTCG ACCATAACCG TGAAGACCTT GTTTTAAGCC GTGAAGAAAA      12900

AGATAGACAA TGGGAATTTG TTATTAAGAT GTTCATGATT GGACGTGACT TAATGGTTGG      12960

TAACCCAAGA CTTGCTGAAC TTGGTTTTGA GGAAGAAGCG GTTGGTCACC ATGCTTTAGT      13020

AGCTGGTTTC CAAGGTCAAC GTCAGTGGAC AGACCATTTT CCAAATGGGG ACTTTATGGA      13080

AACTTTCCTC AATACTCAGT TTGACTGGAA TGGTATTCGA AAACCATTTG TATTTGCGAC      13140

AGAGAATGAT TCACTAAATG GTGTGTCTAT GCTCTTTAAT TATCTATTAA CAAATACTCC      13200

ACAAATCTTT GCTGATGTGC GTACTTATTG GAGCCCAGAG GCTGTTAAAC GTGTAACGGG      13260

ACATACTTTA GAGGGTCGTG CTGCAGCTGG CTTCTTACAT CTAATCAACT CTGGTTCTTG      13320

TACATTGGAT GGTACAGGTC AAGCTACTCG AGATGGCAAA CCTATTATGA AACCATTCTG      13380

GGAGTTGGAA GAAAGTGAAG TGCAGGCTAT GCTTGAAAAT ACAGACTTCC CACCAGCAAA      13440

CCGCGAATAC TTCCGTGGAG GAGGATTCTC AACTCGTTTC TTGACGAAGG GGGATATGCC      ·13500

AGTAACAATG GTACGTCTCA ATCTTCTAAA AGGGGTTGGT CCAGTGCTAC AAATTGCAGA      13560

AGGTTACACA CTTGAACTTC CTGAAGATGT TCACCATACT TTAGATAATC GTACAGATCC      13620

AGGATGGCCA ACTACTTGGT TTGCTCCACG TTTGACAGGA AAAGGTGCTT TCAAGTCTGT      13680

CTATGACGTC ATGAATAATT GGGGAGCTAA TCACGGAGCC ATAACATATG GACACATTGG      13740

AGCAGACTTG ATTACCTTGG CTTCTATGTT GAGAATTCCT GTCAATATGC ATAATGTACC      13800

TGAGGAAGAT ATCTTTAGAC CTAAAAATTG GTCCTTATTT GGAACAGAAG ATCTAGAATC      13860

AGCAGACTAT CGTGCATGTC AGTTGTTGGG GCCACTACAT AAATAAAACT TGTTTATATA      13920

GGAGGTGAAC TTACGTCCCT CCTATCCTTT TAAAAAGATT TGTTAAACAA TTCACAAATA      13980

ATTGAAAACG AATACAAAAA GTAATATAAT GATGTTAAAT AGATAGCGCG GAGGCGCAGG      ¡4040

AGGAAAATTA TATGGCTATA TTTTATGTTC CGGCAGTCAA CCTTATTGGA AAAGGTGTTG      14100

TAAATGAAGT GGGTCCTTAT ATCAAGGAAC TTGGCTATAA AAAGGCACTT TTGGTGACAG      14160

ATAAGTACAT CGAAGGCAGT GATATTTTAC CTAAGACTTT AAAACCACTG GATACAGAAG      14220

GAATCGAATA T                                                         14231
```

(2) INFORMATION FOR SEQ ID NO: 82:

    (i) SEQUENCE CHARACTERISTICS:

651
(A) LENGTH: 16995 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

AGTTCTCTTA ACTTTTTTAG GATGGCATTC TCCGCTCTCA GGTACTCATT TTCTGCTgAA   60

GACGTTCTAA TTCTGTCCTC TCTTCAGGTC TCGTTTTTGG CTTACGTCCC ATTTTAGGTA   120

CTCTCCCTCT TGTTTTCTCA ACAATAGTAT ACCCGTTTTT CCTGTATTGT GCTAGCCAGT   180

TAAGAAGTAT CGTACGACTT GGGAGACCGT ATTCAAGAGA AACTCTATCT TTAGTCCAGC   240

CTTCATGTCA GACTTTATTA CTCATTTCTT GTTTTAAATC AGGAGAATAG TAACGATTTT   300

TTCCTTTTTT GACGAACTCT ATTCCGTAAC GATCAATCAA TTTAATCATG TACCTAATAT   360

TAGAATTGCT TATCCCAAAT TTATTTGAAA GCTTCTCTAA GCTATATCCT TGTTTTCTAA   420

GTTCATAGAT CTGAACTTTA TCATCATAAG TTAGTTTCAT AATAAAAACA CCCCAAAAGT   480

TAGATTTTTT CTGTCTAACT TTTGGGGTGT AGTTCATGTA CACCTGATAT GATGCGTTTT   540

ATAATTTTTA AGCCTTTTTG CCCAGCCTCG TCAAAAGTAA TGTTTTGACA CAAAATCTGT   600

GACAAAACTT TAGTTTTAAA GGTTTTTAAC TTTGTATATA CTAGTTTTAA GAAAAGGAGG   660

ATGATCTAAT GGAAGAAAAA GTATCATTGA AAGTCAGGGT TCAAAAACTA GGGACATCGC   720

TTTCAAATAT GGTTATGCCC AATATTGGAG CATTTATTGC TTGGGGAGTA TTGACTGCCC   780

TCTTTATCGC TGATGGCTAT CTGCCAAATG AACAGTTAGC TACTGTTGTT GGTCCTATGT   840

TAACGTATTT ATTGCCAATC CTGATTGGTT ACACAGGTGG ATATATGATC CATGGCCAAC   900

GTGGTGCCGT TGTAGGAGCT ATTGCTACTG TTGGTGCAAT CACAGGTTCT AGTGTTCCTA   960

TGTTTATCGG AGCTATGGTA ATGGGCCCAC TGGGAGGATG GACTATCAAG AAATTTGATG   1020

AGAAGTTCCA GGAAAAAATT CGTCCCGGAT TTGAAATGTT AGTTAATAAC TTCTCAGCTG   1080

GTCTCGTTGG TTTTGCATTA TTGCTTTTGG CTTTCTACGC AATCGGTCCA GTCGTATCGA   1140

CTCTTACTGG AGCTGTTGGG AATGGTGTTG AGGCTATTGT CAATGCTCGC CTCCTTCCTA   1200

TGGCTAATAT TATCATCGAA CCGGCTAAAG TCCTTTTCCT CAATAATGCC CTCAATCATG   1260

GCATTTTTAC TCCTCTGGGA GTAGAACAGG TAGCTCAAGC TGGTAAGTCA ATTCTCTTCC   1320

TATTGGAAGC TAATCCTGGA CCAGGTCTGG GAATTCTATT AGCTTATGCT GTATTCGGTA   1380

AAGGTTCTGC TAAATCTTCT TCTTGGGGGG CAATGGTTAT TCATTTCTTC GGAGGGATTC   1440

ATGAAATTTA CTTTCCTTAT GTTATGATGA AGCCTACTCT ATTTTTAGCT GCTATGGCAG   1500

652

```
GAGGTATCTC TGGAACTTTT ACTTTTCAAC TCTTAGACGC TGGTCTTAAA TCTCCAGCTT      1560

CACCAGGTTC TATTATTGCG ATTATAGCTA CGGCGCCAAA AGGTGTTTGG CCCCATCTAA      1620

ATGTTCTTTT AGGTGTTTTA GTGGCAGCAG TTGTTTCTTT CCTTGTAGCA GCCCTTATTC      1680

TTCATGCAGA CAAGTCAACT GAGGATTCGC TCGAAGCTGC TCAGGCGGCT ACCCAAGCAG      1740

CTAAGGCTCA GTCTAAAGGT CAGTTAGTAT CAACTTCTGT TGATGCAGTT GTTTCGACAG      1800

ACTCAGTGGA AAAAATCATT TTCGCCTGCG ATGCTGGTAT GGGAAGCTCT GCTATGGGAG      1860

CTAGTATTCT TCGAGATAAG GTTAAAAAAG CAGGTCTAGA GATTCCAGTA TCTAATCAGG      1920

CAATCTCAAA TTTGCTTGAT ACACCAAAAA CATTAATTGT TACTCAGGAA GAACTGACAC      1980

CAAGAGCTAA AGACAAGAGT CCAAGTGCTA TTCATGTTTC TGTTGATAAT TTCTTAGCGT      2040

CCTCTCGTTA TGATGAAATT GTAGCTTCAT TAACAGGAGC TTCTCCAATA GCAGAAATTG      2100

AAGGAGATAT ACCAACTTCA GCACCAGTAG ATAGTCAGGA AAGTGACCTT AACCATATTG      2160

ATGCTGTAGT AGTTGCTTAT GGTAAAGCAC AGGGAACTGC AACTATGGGC TGTGAAACGA      2220

TTCGGGCTAT TTTTAGAAAC AAGAATATTC GTATTCCAGT TTCTACTGCC AAAATTTCAG      2280

AATTAGGTGA ATTTAATTCT AAAAACATAA TGATTGTAAC AACTATTTCT TTACAGGCAG      2340

AAGTGCAGCA AGCAGCACCG AATTCTCAAT TTCTTATTGT GGATAGTTTA GTAACAACAC      2400

CAGAATATGA CAAAAATGGCT GCTAGAATGT ACAAATAGAA CTAGAGGTTT CTAAATTACG     2460

AATGCTATTA ACCAAACGAG AAGAACAATT ATTGAAGGCT TTCCTACATG TAGGGAAGCT      2520

TTCAATGCAA GATATGACTG AAATCTTACA GGTTTCATCT AGAACAATTT ATCGAACTTT      2580

ATCAGATTTG ACAGATAGCA TGGAGCAATA TGGAATCGAA ATAACGAAGC ATGGGAAATA      2640

CTATATTTTG ACTGGAGAGT TGGATGATTT GCCGACAGAA CTTGAAGTGT TAGTTGAGTA      2700

TAGTCCCCAA GAAAGACAAG AGTTGATTAC CTATCGCCTT CTGACTGAGA GTGGTTTTGT      2760

CACCAATGAA GCATTGCAAG AGTGCACGAA AGTCAGTAAT GTAACTATTA TTCAGGATAT      2820

TTCAGATATT GATAAGCGTC TTTTAGACTT TGATCTGAAA ATTGAACGAC AAAAAGGTTA      2880

TCGGATTTCT GGTGATTCAG TTGGTAAGAG AAGATTTTTG GCTATTTTAC TGACAAACTG      2940

TATCTCAGTA GCAGATTTTT CAACCGGTAA TTTTTGGGAGC TTTGATATTT TAGAAGCAGA     3000

TAGAACTGGG CTGGCCAGTC AGATTGTTAA TAAGCAACTG TCAGGTTTTC CAGATATGGA      3060

TGCTAGGATG AAGATGTTTT TTGCGATCTT GTTATCTCTT ATAGGTCAGG AGCAAAACAT      3120

TGAAAATTCA CCTAATACTA GTAAGCAGGC TTTGGAAATT TCTCAAAAAA TTTTTCAAGC      3180

TTACTCTAAG CAGACTGCAC AATTTTATAG TATTCAGGAA ATTATCTATT TTGCGAGCAT      3240

CTTGGATGAA TTAATCATTA AACGTCAGGA CAATCCGCTC TTTACGGAGA AATTTGATGG      3300
```

653

```
TGAATTTTTC TACAATATTT CAAATCTGAT TGATACGGTT TCCATGTATA CCAAGATTGA      3360

CTTTTTTAAG GACAAGGTTT TATTCAATTT TCTTTTCCAT CATATTCGGC TCAGTTTAGG      3420

CGTCCCTATC CTTTTTCAGG GTGAAAATTT GCCAGAATCT ATCCAGATTT TAGTTGAAAG      3480

GAATAAATTT CTTTATACAG TCATCAGTCT TTTAGTGAAT GATATTTTTC CGAAATATCT      3540

TCATACAGAG TATGAGTATG GCATGATTGC CCTACATTTT ATCTCTAGCT TAGGCCGTAG      3600

TCCAGAGATT TATCCAGTCC GTGTTTTGCT TTTAACGGAT GAACGTCGGG TCACTAGAGA      3660

TTTATTAGTC AGTAAAATTA AGAGTGTTGC TCCTTTTGTA GAGTTGATAG ATATTCAATC      3720

TCTAGTAGAT TACCACAGTA TTGATCTCAG TCAGTATGAT TATATTTTAT CTACCAAGCC      3780

GCTGACTAAT CAGGAAATCG ATGTAATTTC TAGTTTTCCA ACCGTCAAAG AATTGCTTGA      3840

ATTACAGGAA CGACTTCAGT ATGTACAGGC ACATCGTACA ATTGTCGCGC GTGATGCTAT      3900

CGCTCCAGAG AAAAGTTATG ACTTGCAAGA TTATTTAATA TCTAGTAGTC AGCTTTTGAG      3960

TCAATTCGAG TTGGTTCAAT TGGAGAATAA TCAATCATTT GAGCACACGG TAGAACAAAT      4020

CATCCAATAT CAGAAGAATG TGAGTGACAG AGCTTACCTA ACAAGAAAAT TGTTATCTCA      4080

CTTCCAGAAT AGTCCTATGG CTATTCCTAA TACTGGTCTG GTGCTTTTAC ATAGTCAGTC      4140

TAGCAAAGTA ACAACAAATA GTTTTACTAT GTTTGAACTC AAACTACCTA TCTCCGCATT      4200

GTCAATGAAA CGAGAGGAAG AAGAGGTCAA AAGGTGTCTG CTAATGCTAA TGTCTAAAGA      4260

AGCTAGCGAG GAAGCTAGAG ATTTAATGAC AGCTATTAGT CAGTCGATTA TTGAAAATCA      4320

TCTTTATACA GAGATTTACA AGACGGGAAA TCAATCCATT ATTTATCAGA TGCTAAATAC      4380

TATTTTTAAC GAAAAAATTA AGAAATTGGA GAACTAATAT GAAACTTGAA AAACATTTGA      4440

TTAAGCTTAA TAAACAATTT TCTAACAAGG AGGAAGCTAT TTGTTATTGT GGGCAAGTTC      4500

TTTATGAGGG TGGATATGTT AATGAAGACT ATATTGAAGC CATGATTGAG CGAGATAAAG      4560

AGCTATCTGT TTACATGGGT AACTTTATCG CCATACCGCA TGGAACAGAT GCAGCAAAAA      4620

ATGATGTCCT CAAGTCTGGT ATTACAGTCG TTCAAGTCCC TAGAGGGGTT GATTTTGGGA      4680

ATGTATCTAA CCCTCAAGTG GCAACGGTTC TTTTTGGTAT TGCTGGTATT GGTAATGAAC      4740

ACTTAGAAAT TATTCAGAAA ATTTCTATCT TCTGTGCAGA TGTAGATAAT GTTCTTAAAC      4800

TAGCAGATGC TCAGTCAAAA GAGGAAGTAT TGCGCTTATT TGATGCTGTT GAATAATTGA      4860

ATTTAGTCAT TTGTCATCTA GTATATATGT CCCTCAAATA GGAAAAGGAG AAATTGAATG      4920

AAACATTCTG TTCATTTTGG TGCCGGTAAT ATCGGTCGTG GTTTTATAGG TGAAATTCTA      4980

TTTAAAAATG GTTTCCATAT TGATTTTGTG GATGTCAATA ATCAGATAAT TCATGCTCTG      5040
```

654

```
AATGAAAAGG GCAAGTATGA AATTGAAATT GCACAGAAAG GACAGTCTCG TATAGAAGTA      5100

ACTAATGTGG CTGGCATTAA TAGCAAAGAA CATCCTGAGC AAGTCATTGA AGCGATTCAA      5160

AAGACGGATA TTATTACTAC TGCAATCGGA CCTAATATAC TCCCTTTTAT CGCCGAACTT      5220

CTAGCCAAAG GAATCGAAGC TCGCCGAGTT GCAGGAAATA CACAGGCATT GGATGTTATG      5280

GCCTGTGAAA ATATGATTGG CGGGTCTCAA TTTCTTTATC AAGAAGTCAA GAAATATTTA      5340

AGTCCGGAAG GTTTGACATT TGCTGATAAC TACATAGGTT TTCCAAATGC TGCAGTAGAC      5400

AGGATTGTTC CAGCACAAAG TCACGAAGAT TCCCTTTTTG TTGTGGTCGA GCCCTTTAAT      5460

GAATGGGTCG TGGAAACCAA GCGTCTTAAA AATCCAGATT TACGTCTAAA AGATGTGCAT      5520

TATGAAGAAG ATTTAGAACC CTTTATTGAG CGAAAACTTT TTTCAGTCAA TTCTGGACAT      5580

GCAACTTCAG CTTACATTGG TGCGCATTAT GGTGCCAAGA CAATTTTGGA AGCTCTTCAA      5640

AATCCTAATA TTAAATCTCG GATTGAATCT GTATTAGCTG AAATTCGGAG TCTCTTGATT      5700

GCCAAATGGA ACTTTGATAA AAAAGAATTG GAGAATTATC ACAAAGTCAT TATAGAACGA      5760

CTTGAAAACC CTTTCATAGT GGACGAGGTT AGTCGCGTAG CTCGTACTCC AATCCGAAAA      5820

TTAGGCTATA ATGAACGATT CATCCGGCCG ATACGTGAAT TGAAAGAACT CAGTTTGTCA      5880

TATAAAAACC TACTTAAAAC AGTTGGCTAT GTCTTTGACT ATCGCGATGT AAATGATGAA      5940

GAAAGTATTC GATTAGGTGA ATTGTTGGCT AAACAATCAG TCAAAGATGT TGTTATACAA      6000

GTTACAGGTT TAGACGACCA AGAATTGATT GAGCAAATTG TAGAGTATAT TTAATCTTTT      6060

TCGAAAATCT CTTCAAATCA GGTTAGCATC GCTTTGTCTT AGGCATATGT TGTTCTATCT      6120

ACAACCTCAA AGCAGTGCTT TGAGCTGACT CCGTCAGTCT TATCTGCAAT CTCAAAACAC      6180

TGTTTGAGTT ATCTGCGGTA ATCTTTCTAG CTTGTCTTTG ATTTTTGTTG TTATTTATAA      6240

GGTAAAAGAA GCTGGACAAA AAGTCTTCAA AATCGGGAAA AGGCAGCCTA TCGGGTGTTC      6300

AAAAATCTTG ATAGGATGTC CTTTATTATG GAAAGCCTTA TTGGATTTTC TCCTCAGATT      6360

GAGTTTTTGA TCAGCTTTAT GAGATAGGTC TTGCTAGAGA TGTAGCCCAT CATGTTATTT      6420

TTATGGACAG TGGGAAAATT GTTGAAAAAA ATAATGCCCA TCAATTCTTT AGTCGTCCAA      6480

GAGAAGAACG AACCAAGCAA TTTTGGAACG AATTCTTTCG AATGCGATCT ATATAGTAAA      6540

ATGAAACAAG AACAGGACAA ATCGATCAGG ACAGTCAAAT CGATTTCTAA AAATGTTTTA      6600

GAAGTAGAGG TGTACTATTC TAGTTTCAAT CTACTATATA ACTGAAAAAT TAGATAAATT      6660

AGTTTTGGAA AATGACTAAC CAAAAGATAT CCAAAGTAGT CTAAAATTGT CTATACTTTA      6720

TGAGTGTTTT AGTTAGGAAA AAGGCTTGTT GTCTATAATT GTCTGCATTA GTCTAGATTT      6780

TATTTATAGA AAATGTTATA ATAGACTGTA TTTAAAAAAT TTTAAGGAGA AATGACAGAA      6840
```

655

```
TGTCTGTATC ATTTGAAAAC AAAGAAACAA ACCGTGGTGT CTTGACTTTC ACTATCTCTC      6900

AAGACCAAAT CAAACCAGAA TTGGACCGTG TCTTCAAGTC AGTGAAGAAA TCTCTTAATG      6960

TTCCAGGTTT CCGTAAAGGT CACCTTCCAC GCCCTATCTT CGACCAAAAA TTTGGTGAAG      7020

AAGCTCTTTA TCAAGATGCA ATGAACGCAC TTTTGCCAAA CGCTTATGAA GCAGCTGTAA      7080

AAGAAGCTGG TCTTGAAGTG GTTGCCCAAC CAAAAATTGA CGTAACTTCA ATGGAAAAAG      7140

GTCAAGACTG GGTTATCACT GCTGAAGTCG TTACAAAACC TGAAGTAAAA TTGGGTGACT      7200

ACAAAAACCT TGAAGTATCA GTTGATGTAG AAAAAGAAGT AACTGACGCT GATGTCGAAG      7260

AGCGTATCGA ACGCGAACGC AACAACCTGG CTGAATTGGT TATCAAGGAA GCTGCTGCTG      7320

AAAACGGCGA CACTGTTGTG ATCGACTTCG TTGGTTCTAT CGACGGTGTT GAATTTGACG      7380

GTGGAAAAGG TGAAAACTTC TCACTTGGAC TTGGTTCAGG TCAATTCATC CCTGGTTTCG      7440

AAGACCAATT GGTAGGTCAC TCAGCTGGCG AAACCGTTGA TGTTATCGTA ACATTCCCAG      7500

AAGACTACCA AGCAGAAGAC CTTGCAGGTA AAGAAGCTAA ATTCGTGACA ACTATCCACG      7560

AAGTAAAAGC TAAAGAAGTT CCGGCTCTTG ACGATGAACT TGCAAAAGAC ATTGATGAAG      7620

AAGTTGAAAC ACTTGCTGAC TTGAAAGAAA AATACAGCAA AGAATTGGCT GCTGCTAAAG      7680

AAGAAGCTTA CAAAGATGCA GTTGAAGGTG CAGCAATTGA TACAGCTGTA GAAAATGCTG      7740

AAATCGTAGA ACTTCCAGAA GAAATGATCC ATGAAGAAGT TCACCGTTCA GTAAATGAAT      7800

TCCTTGGGAA TTTGCAACGT CAAGGGATCA ACCCTGACAT GTACTTCCAA ATCACTGGAA      7860

CTACTCAAGA AGACCTTCAC AACCAATACC AAGCAGAAGC TGAGTCACGT ACTAAGACTA      7920

ACCTTGTTAT CGAAGCAGTT GCCAAAGCTG AAGGATTTGA TGCTTCAGAA GAAGAAATCC      7980

AAAAAGAAGT TGAGCAATTG GCAGCAGACT ACAACATGGA AGTTGCACAA GTTCAAAACT      8040

TGCTTTCAGC TGACATGTTG AAACATGATA TCACTATCAA AAAAGCTGTT GAATTGATCA      8100

CAAGCACAGC AACAGTAAAA TAATCTTAAT AAACAGAAAA CCCACCTGAA TTGGTGGGTT      8160

TTCTGATGCA CTATTTTCCA AAAATCTCTT TGAGGTCTGT GTCTGTAATC CCAATCATGG      8220

CTGGGATGCG GTCCCAGTTT TCTTCGGTTA GGATGTAGGA TTGTTCAGAG GCACTTGATG      8280

TGACTGTTTC AGAGACAGCT TGTTGCTTTT CTTCAACATT CTCCAGTAGA TCACTGAAGC      8340

GTTCAATCAG ATAGGTTTTT CGGGCAGTTC CGATGTGTTG GGTAGCATAG TCGAAGGCTT      8400

GTAATTCGCC TAGTAAGATG AGTTTGCTTT TGGCACGTGT AATGGCTGTG TAGATGAGAT      8460

TTCGCTCCAG CATACGTCGG CTAGCACTAG TAATCGGTAG GATGACAACT GGGAACTCAC      8520

TTCCCTGAGA CTTATGAATA CTCATGGCAT AGGCCAAGCG AATCTTGTAC CATTCGTTAC      8580
```

656

```
GGGGGTAAGA GACTTCATTA CCATCAAAAT CAATGACAAT CTCGTCTTGT TTCGATTCGG    8640

TGTATTTACC AGGAATCAGG TCTGTGATAG CTCCTAAATC CCCATTAAAG ACATTGATTT    8700

CAGCATCGTT AACCAAATGA ATGACCCTGT CTCTCTTACG ATAGTGACAC TGAGGAGCTT    8760

CAAAACTGAG TTGATCTTTT TGTGGGGGAT TGAGCAGGTC TTGCATGAGC TGATTGATAG    8820

CATCAATCCC TGCCGTCCCT CGGTACATAG GAGCCAGAAC TTGGATATCA CGGGCGGGAA    8880

TACCATTTCT GAGGGCGGCA CCTAAGATTT TTTCAATGGT GGCAGGAATA TGGCCACTAG    8940

CAATTTCAAA GTAGGAACGG TCAGCTTTTT TTTGGGTGAA ATCAGCTGGC AAGATGCCCT    9000

GTCGAATCTG ACTAGCTAGG GTGACGATGG TTGATTCTTT GCTTTGTCGA TAAATTTTTT    9060

CCAAGCGAGT CTGAGGAATC AAAGGAATAT GAAGTAGATC CGCTAGAACC TGTCCAGGAC    9120

TGACAGAAGG TAGCTGATCA CTGTCACCTA CGATGAGGAT CTTACTGTTA GAAGAGATAT    9180

TGGAGAAGAG TTGATTGGCC AGCCAAGTAT CTACCATAGA GAATTCATCC ACGATGATAA    9240

AGTCAGCATC TAGGTAATCT TCCAGATGAC TGGTATCATC GTCACCTGTC ATTCCCAAGT    9300

GGCGATGTAT GGTCGCGCTA GGCAAACCTG TCAATTCATT CATGCGACGA GCAGCTCGAC    9360

CAGTTGGAGC AGCAAGAAGA ATGGGCAGAT TGCTTTTCTT CCTGAAGTCA AGTCCTTCTA    9420

AAAGGGCATA AACAGCAATG ATTCCATTGA TAACAGTTGT CTTACCAGTA CCAGGCCCAC    9480

CTGTCAGGAT AAAGACCTTA TTCTGGATAG CATCACAGAT AGCCTGTTTT TGAATGTTAT    9540

CATACTCAAT TCCCAGTTCT TGCTCGACAG TAGTGATATG TTTTTGAATG GTTTCTAAAT    9600

CATGACTCTT CTGTTTTCCT TTTTCAAGGA TACGAACCAA GTGACTGCGG ATGCCTTCCT    9660

CAGCGAAAAA GAGGCTGTTG TCAAAGATCT TGGTATCAAT CTGCTGAACC TTGTCTTCTT    9720

CGATCAGGTA GGAGAGCTCT TGGGCAACTT GGCTGGGGTC TAGTTCCACG GGACGGGAAG    9780

ACTCAAGGAG AGTAAGGGTT TGTTCCAGCA AATCCCGTGC TTCAACATAG GTGTCCCCTG    9840

TTTCCATACA GGCCTGAAAA AGACTGTGAA CTAGACCGGC GCGGAAGCGT TCAGGAGCCT    9900

GACTTTCGAT GCCTAGTTCC TCAGCTAGTT GGTCAGCAAT GGTAAAGCCC AAACCCTTGA    9960

TATCCTCAAC CAGCTGGTAG GGATAATTTT CAACCACATC AAGGGTTTCT TCCTTGTAAA   10020

AGTCTTGAAT CTGAAAGGCT AGTTTGTTGG GAATGCCGTA GTTGGCTAGT TTGGCCAAAA   10080

TCATCTCCGT TCCGTAGTTG AGACGGAGAG TGGAGACGAA AGCCTCGCGA TTTTTGGCAG   10140

AGAGTCCTGC GATGCCTTCT AACTTTTCTG GGTGTTGCAA AATTTCGTCA ATGGTATTTT   10200

CGCCATAGGT ATCCACGATT TTCTGAGCTG TCTTGAGACC AATCCCCTTG AAATGGCTAC   10260

TTGAAAAGTA CTTGACCAAG CCCTTACTAG TTGGTTTTGC GCGATCATAA CGACTGATTT   10320

GCAGTTGTTC TCCATACTTG GAGTGCTGGA CAATTTGCCC CCAAAAAGTA TAGTCTTCGC   10380
```

657

```
CCTCAATTAC ATCAGCCATG GTTCCTGTGA CAATGATTTC AAAATCATCA AAATCCTCTG    10440
CGTCCGTATC GTCGATTTCT AGGAGGAGGA TGCGATAAAA ATTGCTGGGA TTTTCAAAAA    10500
TAATCCGTTC AATAGTTCCT GAAAAATAAA CTTCCATAAA ATTCCTTTGC ATGAATAGGT    10560
GAGAGTTGGG ATTGTTTTTA TTTTATACTC TTCGAAAATA TCTTCAAACC ACGTCAGCTT    10620
CCATCTGCAA CCTCAAAACA GTATTTTGAG CTGACTTCGT CAGTTCTATC CACAACCTCA    10680
AAACACTGTT TTAAGCAGCC TACGGCTAGC TTCCTAGTTT GTTCTTTGAT TTTCATTGAG    10740
TATTTGTAAA TAAACAATCA CTTCTCACGA TAGAAGAAGA GGCTGAGATT GGTGATTCTC    10800
TGCCTCTTAG GTTTCTTAAA ATGTTCCGAT ACGGGTGATT GGCCATAAGC GGAATTTAGC    10860
TTCCCCTGTG ATATCTTTTG CTTTGAAGGT ACCTACGTGG CGGCTGTCGC TCGAAACCAA    10920
GCGGTCATCT CCGAGGAGAA GGTATTCTCC TTCTGGAACA GTAAAGCTAA AGTTGGTGTT    10980
GTAGTTGACA TCAACTGTGA AGGCTTGAGC TTTTTGAGCG ATACTTCTAA AGAAAGTTCC    11040
TTTATTTCCT TCAAAGCCCT TGCCTGAGTA AGTGCTTTGG AGTTTGTCAT CCTTGAAGCG    11100
TTTGATATAG TCTGCTAGAT AAGGCTCGTC CGTTTCTTTG TCATTGATGT AGAGTTTATC    11160
ATTTTCGTAA CGAATGGTGT CGCCAGGCAT TCCAATCACG CGCTTGACGA TGTCCTTATT    11220
GCCATCTTCC TCATGGGCCA CCACGATATC AAAACGGTCA ATAGGAAGGT GTTTTACAAC    11280
GAAGAGAATT TCGCCATCCG CTAGGGTCGG ATCCATGGAA TGTCCTTCTA CGCGAACATT    11340
GCTCCAAAAA AAGATACGAC TTAAAGCTAG TAATGACAGA ATTAGGAGGA ACAATCCCCA    11400
CTCTTTTAAG AAATTTTTAA ATGAATTCAT AACTTACCTT TCTAAGCGTT TTTTCGCTTT    11460
TTCAGTGTTT TTAAAGTGCA ATTTGGCGCA GAAGCTGAGT CCCTGCATAC CATAGGCTTG    11520
CAAAATCTGG CTAGCCACCT TGTCAGAAGC CGTTCCAGCT CCACTTGGGA GCTGATAACC    11580
CAGTTCTCGT CCCAAATTTT CAAGATTTTC CAGAAAGAGA TCACGCGCAA TGACAGAAGA    11640
AACTGCGACA GACAAGTATT TGCCCTCAGC CTTTTCTTCT AAGCTGATAG GATTGCTGAA    11700
ACGATTGGCC TCTTGTGCCA AGTACTTGTC ATAATTTTTA GCACTGGTAA AGGCATCAAT    11760
CACAATTTTC TCAGGCTGAA CACCTTTTTG AAGGAGGAGA TAGATAGCCT GATTATGGAG    11820
GGCAACCTTA ACCGAAACAG CGTTGTAGCG GTCTCCGATG ACCTCGTTGT ACTTGCTGGG    11880
TGAGAGAAGG AGTGCCTGGT GCTGAATTTT TTCCTTGAGA ATAGGAGTAA TCTGACGGAT    11940
CTTTTGGTCG GTCAGAGTCT TAGAATCCCC CACACCGAGT TTTCGTAAAA AGTCGTGCTG    12000
GTCAGGTGTG ACAAAGGCAG CCACAACTGC AAGCCCACCA AAGTAGGAAC CATTTCCCAC    12060
CTCATCTGTC CCAATTAAAG GAAGATTTTG TCCGCTGGTT TGCTCTACAG CTTGATAGCC    12120
```

658

```
AAAGAAACTG GCGTATTTTT CAGCCCCTTC ACCCTGAAGC AAGATTTTTC CAGAAGTATA    12180

GATAGAAACC GTTGCTTGAG GTAGTTTCAA AAAGTAGCGG ATATAGGGAT TCTTGCTAGG    12240

AGCCAGACTG GTTTGATAGT GTTCAAGAAA AGCCTGAATA TCCTTTTCGC TTGGTGTGAG    12300

TGTGATACTT GCCATAGTTT CTATTGTACC ACAAAAGCAG TAAAATTTGT AAAAACTGAC    12360

AAAATTAGCG AATTTTGGTA TAATATCGTG AGGTGAATTT TATGGCAAAT CTAAATCGAT    12420

TCAAATTTAC ATTCGGGAAA AAATCGTTAA CCTTGACAAG CGAACATGAC AACCTTTTTA    12480

TGGAGGAAAT CGCTAAGGTT GCGACAGAAA AATACCAAGC AATTAAAGAA CAAATGCCTA    12540

GCGCAGATGA TGAAACAATC GCTCTTTTGT TGGCAGTCAA CTGTTTATCA ACTCAGCTCA    12600

GCCGTGAGAT TGAATTTGAC GATAAGGAGC AAGAGCTAGA AGAACTCCGT CACAAGCTTG    12660

TGACTTGTAA GCAAGAACAG AGCAAGATTG AGGATTCCTT ATGATTTCAT TCCTTCTTCT    12720

ATTGGTCTTG GTTTGGGGAT TTTATATCGG CTATCGGAGA GGCCTGCTCT TACAGGTTTA    12780

TTACCTGATT TCAGCCATGG CATCGGCTTT TATGGCTGGC CAGTTTTATA AGGGGCTTGG    12840

AGAGCAATTC CATTTATTGC TCCCTTATGC AAATTCGCAG GAAGGTCAGG GGACTTTCTT    12900

TTTCCCATCG GATCAACTCT TTCAGCTGGA TAAGGTCTTT TATGCAGGTA TCGGCTACTT    12960

GCTTGTATTT GGGATTGTCT ATAGCATTGG TCGTTTACTT GGTCTTCTCT TACACTTGAT    13020

TCCTAGCAAA AAACTGGGTG GTAAGTTGTT CCAAGTTTCA GCAGGTATCT TGTCCATGTT    13080

GGTGACCTTA TTTGTCTTGC AAATGGCCTT GACAATCTTG GCGACCATCC CCATGGCAGT    13140

TATACAAAAT CCTCTTGAAA AGAGTATCGT CGCAAAACAC ATCATCCAGA GCATACCGGT    13200

AACAACCAGT TGGCTCAAAC AAATCTGGGT GACAAATTTA ATCGGATAAA AAGGGCAGGA    13260

GTTTTCCTAG CCCTTTGTTT ACAGATTTGA CTCGAATCTA TCAGAATGTA AAAAGCTACC    13320

ACACCTAGAC ATTCAAAGAC AAGGAAATAA AGATGAATAA GAAAATATTA GAAACATTAG    13380

AGTTCGATAA GGTCAAGGCC TTGTTTGAGC CTCATTTGTT GACCGAGCAG GGCTTGGAGC    13440

AATTGAGACA ACTGGCTCCG ACTGCCAAAG CAGATAAAAT CAAACAGGCT TTTGCTGAGA    13500

TGAAGGAAAT GCAGGCTCTT TTCGTCGAGC AACCGCATTT TACTATTCTC TCAACTAAGG    13560

AAATTGCAGG AGTCTGCAAG AGGTTGGAGA TGGGAGCGGA TCTCAATATC GAGGAGTTCC    13620

TACTCTTGAA ACGCGTGCTT CTTGCCAGCC GAGAACTTCA AAATTTTTAC ACCAATCTGG    13680

AAAATGTCAG CTTGGAAGAA TTAGCCCTTT GGTTTGAGAA ATTACATGAT TTTCCGCAAT    13740

TACAAGGAAA TCTTCAGGCC TTTAATGATG CGGGTTTCAT TGAAAATTTT GCCAGTGAAG    13800

AATTGGCGCG AATCCGTCGA AAAATACATG ATAGCGAGAG TCAGGTACGC GATGTTTTAC    13860

AAGACTTGCT CAAGCAAAAA GCGCAGCTGT TGACGGAAGG AATTGTTGCT AGCAGAAATG    13920
```

659

```
GCCGTCAGGT TTTACCAGTC AAAAACACCT ACCGCAATAA GATTGCAGGT GTCGTTCATG    13980

ATATTTCTGC TAGTGGAAAC ACCGTCTATA TCGAACCCCG TGAGGTAGTC AAACTGAGCG    14040

AAGAAATTGC TAGTCTGCGA GCAGATGAGC GCTATGAAAT GCTTCGCATT CTCCAAGAAA    14100

TTTCTGAGCG TGTCCGCCCT CATGCGGCTG AGATTGCTAA TGACGCTTGG ATTATCGGTC    14160

ATCTGGACTT GATTCGTGCC AAGGTTCGAT TTATCCAAGA AAGACAAGCA GTCGTGCCTC    14220

AGCTGTCAGA AAATCAAGAG ATTCAACTGC TCCATGTCTG CCATCCTTTG GTCAAAAATG    14280

CCGTCGCAAA TGATGTCTAT TTTGGTCAAG ATTTAACAGC TATTGTCATT ACAGGTCCCA    14340

ATACAGGTGG GAAGACCATC ATGCTCAAAA CTCTGGGCTT GACACAGGTC ATGGCCCAGT    14400

CAGGATTGCC GATTTTAGCA GACAAGGGAA GTCGTGTTGG TATTTTTGAA GAAATCTTTG    14460

CTGATATTGG AGATGAGCAG TCTATTGAGC AGAGCTTGTC TACCTTCTCT AGTCATATGA    14520

CCAATATCGT GGATATTCTT GGCAAGGTCA ACCAACATTC ACTCTTACTT TTGGATGAGT    14580

TGGGGGCTGG TACTGATCCC CAAGAGGGAG CAGCCCTTGC CATGGCTATT CTGGAGGACC    14640

TTCGCCTGCG TCAAATCAAG ACCATGGCGA CGACCCACTA TCCAGAACTC AAGGCCTACG    14700

GTATTGAGAC AGCCTTTGTG CAAAATGCCA GTATGGAGTT TGATACTGCA ACTCTTCGCC    14760

CGACCTATCG CTTTATGCAG GGTGTTCCTG GCCGAAGTAA TGCCTTTGAA ATTGCCAAAC    14820

GTCTAGGCCT ATCTGAAGTT ATCGTAGGAG ATGCCAGTCA GCAGATCGAT CAGGACAATG    14880

ACGTCAATCG TATCATTGAG CAATTAGAAG AGCAGACGCT GGAAAGCCGC AAACGTTTGG    14940

ACAATATCCG TGAGGTGGAG CAAGAAAATC TCAAGATGAA CCGTGCGCTA AAAAAACTCT    15000

ACAACGAGCT TAATCGTGAA AAGGAAACCG AGCTTAACAA GGCGCGTGAA CAGGCTGCTG    15060

AGATTGTGGA TATGGCCCTA AGTGAAAGTG ACCAGATTCT CAAAAATCTC CACAGTAAAT    15120

CCCAACTCAA GCCCCACGAA ATCATTGAAG CCAAGGCCAA GTTGAAAAAA TTGGCTCCTG    15180

AAAAAGTGGA CTTGTCTAAA AATAAGGTCC TTCAAAAGGC CAAGAAAAAA CGAGCTCCAA    15240

AGGTGGGAGA TGATATCGTG GTTCTCAGTT ATGGTCAGCG TGGTACCTTG ACCAGTCAAC    15300

TCAAGGACGG TCGCTGGGAA GCCCAAGTTG GCTTGATTAA GATGACCTTG GAAGAGAAAG    15360

AGTTTGATCT TGTTCAAGCC CAGCAAGAAA AACCAGTCAA GAAGAAACAG GTCAATGTTG    15420

TGAAACGAAC TTCTGGGCGA GGACCTCAAG CTAGACTGGA TCTTCGAGGC AAGCGCTATG    15480

AAGAAGCCAT GAATGAGCTA GATACCTTCA TCGACCAAGC CTTGCTTAAC AATATGGCTC    15540

AAGTTGATAT CATCCATGGT ATCGGAACAG GAGTCATCCG TGAAGGAGTT ACCAAATACT    15600

TGCAAAGAAA CAAACATGTC AAGAGTTTCG GCTATGCCCC ACAAAATGCT GGAGGCAGTG    15660
```

```
                                      660
GTGCGACTAT TGTCACTTTT AAAGGATAGC AGTATTCTGG ACTTTATAAA GTAAAAACTG    15720

TTGAACTAAT TTTTACTAAT AAACACATTG ACAAAAGCCA ACATTTTTTG TAAAATTAGA    15780

ATCAATTAAA TACCAACACC GAATGAAGTT TAATAGAAGT GGGGAATCGT TTGATTTTCC    15840

ATGACTGTAA ATGGACGGAA CTCTGGAGAG ACCGTAAAGG CACCGAAGGG CAAGGCAGGC    15900

AACTGCTCAA ACTCTCAGGT AAAAGGACAG AGCTAGGATA GACCGCTTTT TAGCATTTAT    15960

CTAAGCATTC CAGAGTACAT GTATCTTGCA TGTGCTCTTT CTTTTGGGGT TGAAACGATA    16020

GGAGAAGGAA ATGTTAGAAT TGCTTAAATC AATCGATGCT TTTGCTTGGG GACCGCCCCT    16080

CTTGATTTTA TTGGTCGGAA CAGGGATTTA CCTAACTATT CGGCTAGGAC TCTTGCAGGT    16140

TTTGCGTCTA CCCAAGGCCT TTCAGCTTAT TTTTATCCAG GATAAGGGAC ATGGTGATGT    16200

ATCCAGTTTT GCAGCTCTGT GTACAGCCTT GGCATCAACT GTTGGAACAG GAAATATCAT    16260

AGGAGTTGCG ACGGCTATCA AGGTTGGTGG ACCAGGAGCT CTATTTTGGA TGTGGATGGC    16320

GGCTTTCTTT GGAATGGCTA CCAAGTATGC GGAAGGACTC TTGGCCATCA AATACCGCAC    16380

CAAGGACGAC CATGGTGCAG TAGCGGGAGG TCCCATGCAT TATATCCTTC TAGGGATGGG    16440

AGAAAAGTGG CGACCACTTG CTGTTTTGTT TGCAGTAGCA GGAGTATTGG TTGCTCTCTT    16500

GGGAATCGGA ACCTTCACCC AAGTCAACTC GATTGCAGAA TCTATCCAAA ATACAACGAC    16560

GATTTCGCCA GCCATCACAG CTCTCGTCTT GTCTGTCTTT GTAGCGATTG CAGTCTTTGG    16620

TGGACTCAAG TCTATTTCTA AGGTTTCAAC TACTGTTGTT CCTTTTATGG CCATCATTTA    16680

TATCTTAGGA ACTCTTACAG TTATTTTCTT TAATATCGGA AAAATCCCTG GCACAATCGC    16740

TTTAGTCTTT ACCTCAGCTT TTAGTCCCCT TGCTGCGGTA GGTGGATTTG CTGGTGCTAG    16800

CGTTCGGATG GCTATTCAAA ATGGTGTGGC GCGTGGTGTG TTCTCAAACG AATCTGGTCT    16860

GGGTTCTGCT CCTATTGCAG CTGCAGCTGC CAAGACAAAT GAACCAGTAG AGCAAGGTTT    16920

GATTTCCATG ACAGGAACCT TTATTGATAC CCTCATCATT TGTACTCTAA CTGGTTTGAC    16980

CATCTTGGTA ACTGG                                                     16995
```

(2) INFORMATION FOR SEQ ID NO: 83:

       (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 28473 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

```
CCGGGGCTTT TGTAGTATAA TAGAGATACG TTTTGAAAGT AGGAGGTATC TATGGACTTA         60
```

661

```
ACTAAGCGCT TTAATAAACA GTTAGATAAA ATTCAAGTTT CGTTGATTCG TCAGTTTGAC      120

CAGGCTATTT CGGAGATTCC TGGGGTCTTG CGTTTGACCT TGGGGGAACC TGATTTTACA      180

ACGCCAGACC ATGTCAAGGA GGCGGGCAAG CGAGCGATTG ATCAGAACCA ATCCTACTAT      240

ACAGGGATGA GTGGTCTGCT GACTCTACGT CAGGCAGCCA GTGACTTTGT TAAGGAAAAG      300

TACCAACTGG ACTATGCTCC TGAAAATGAA ATCTTGGTTA CAATTGGGGC GACAGAGGCT      360

TTATCTGCGA CTTTGACGGC TATTTTGGAA GAGGGAGACA AGGTACTTTT GCCAGCTCCT      420

GCTTATCCAG GCTATGAACC GATTGTTAAC TTAGTTGGGG CAGAAATTGT TGAGATTGAT      480

ACGACTGAAA ATGGTTTTGT CTTGACTCCT GAGATGTTGG AGAAGGCCAT TTTGGAGCAG      540

GGTGATAAGC TCAAGGCGGT TATTCTCAAC TATCCAGCCA ATCCGACAGG AATTACCTAC      600

AGTCGAGAGC AGTTAGAGGC CTTGGCAGCT GTTTTACGCA AGTACGAAAT TTTTGTTGTC      660

TGTGATGAGG TTTACTCAGA ATTGACCTAC ACAGGCGAAG CCATGTGTCT CTAGGAACGA      720

TGTTGAGAGA CCAGGCTATT ATTATCAATG GTTTGTCTAA ATCGCATGCC ATGACAGGTT      780

GGCGTTTGGG GCTGATTTTC GCTCCTGCGA CCTTCACAGC CCAGTTAATC AAGAGTCACC      840

AGTACTTGGT CACTGCCGCA AATACCATGG CGCAACATGC TGCGGTAGAA GCCTTGACGG      900

CTGGTAAAAA CGATGCGGAC CCATGAAGAA GGAATATATC CAACGTCGGG ACTATATCAT      960

CGAAAAAATG ACTGCTCTTG GTTTTGAGAT TATCAAACCA GACGGTGCCT TCTATATTTT     1020

TGCTAAAATT CCAGCGGGCT ACAATCAAGA CTCCTTTGCT TTTCTGAAGG ATTTTGCTCA     1080

GAAGAAGGCC GTTGCCTTTA TCCCTGGTGC AGCCTTTGGA CGTTACGGGG AAGGCTACGT     1140

CCGCCTATCT TATGCAGCCA GCATGGAGAC TATCAAAGAA GCCATGAAAC GACTTGAGGA     1200

GTACATGAGA GAAGCATGAT TCAGTCTATC ACGAGTCAAG GCTTGGTGCT TTACAATCGC     1260

AATTTTCGTG AGGATGACAA GCTCGTCAAA ATTTTTACAG AGCAGGTTGG CAAACGCATG     1320

TTTTTTGTCA AACACGCTGG TCAGTCTAAG CTGGCGCCTG TTATTCAGCC CTTGGTGCTG     1380

GCACGATTTC TCTTGCGAAT CAATGATGAC GGACTCAGTT ACATCGAAGA CTATCATGAG     1440

GTCATGACTT TTCCCAAGAT TAATAGTGAC CTCTTTGTCA TGGCCTATGC GACCTATGTG     1500

GCAGCTCTTG CAGATGCTAG TTTGCAGGAC AATCAGCAGG ATGCTCCCTT GTTTGCTTTT     1560

TTGCAAAAGA CTTTGGAGTT GATGGAAGCA GGCTTGGATT ATCAGGTTTT GACCAATATT     1620

TTTGAAATTC AAATTTTGAC TCGATTTGGA ATCAGCCTCA ATTTTAATGA GTGTGTCTTC     1680

TGCCATCGGG TTGGTCAGGC TTTTGACTTT TCTTTCAAAT ATGGAGCCTG CCTCTGTCCA     1740

GAGCATTATC ATGAGGATAA GAGACGTTGT CATCTCAATC CCAATATCCC CTATCTGCTC     1800
```

662

```
AATCAATTTC AAGCTATTGA TTTTGAGACT TTGGAGACCA TTTCGCTCAA GCCTGGAATC    1860

AAGCAAGAGC TACGCCAATT TATGGATCAA TTATATGAAG AGTACGTTGG GATTCACCTA    1920

AAATCAAAGA AATTTATTGA TTCCCTAGCA GACTGGGGAC AATTACTAAA AGAGGAAAAG    1980

AAATGAAAAA AATCGCAGTA GATGCCATGG GGGGCGATTA CGCACCTCAG GCCATTGTTG    2040

AGGGTGTCAA TCAAGCCCTA TCTGACTTTT CAGATATCGA GGTTCAACTT TACGGAGATG    2100

AAGCTAAAAT CAAGCAATAT CTGACAGCGA CAGAGCGCGT CAGCATTATC CATACGGATG    2160

AGAAGATTGA TTCGGATGAT GAACCTACGA GAGCTATTCG GAATAAGAAA AATGCCAGTA    2220

TGGTATTGGC AGCCAAGGCT GTCAAAGATG GTGAAGCAGA CGCTGTCCTT TCGGCTGGGA    2280

ATACAGGTGC CTTGTTGGCA GCAGGATTCT TCATCGTGGG TCGTATCAAG AATATCGACC    2340

GTCCTGGACT CATGTCTACC TTGCCTACCG TTGATGGAAA AGGTTTTGAC ATGCTAGACC    2400

TTGGTGCCAA TGCAGAAAAT ACAGCCCAGC ACCTCCATCA ATATGCGGTT CTAGGTTCCT    2460

TCTATGCTAA AAATGTCCGT GGCATTGCGC AACCACGCGT TGGTTTGCTC AACAACGGAA    2520

CAGAGAGTAG CAAGGGCGAC CCGCTTCGTA AGGAAACTTA TGAATTACTG GCGGCTGATG    2580

AAAGTTTGAA CTTTATCGGA AACGTGGAAG CGCGTGATTT GATGAATGGC GTTGCAGATG    2640

TTGTTGTGGC AGATGGTTTC ACGGGAAACG CTGTGCTCAA ATCCATCGAA GGGACAGCTA    2700

TGGGAATCAT GGGCTTGCTC AAGACAGCTA TTACAGGTGG TGGTCTTCGA GCGAAACTAG    2760

GTGCCCTCCT TCTCAAGGAC AGCCTCAGTG GTTTGAAAAA ACAGCTCAAT TATTCAGATG    2820

TTGGTGGAGC GGTCTTGTTT GGTGTTAAGG CACCTGTTGT CAAGACTCAT GGCTCAAGCG    2880

ATGCCAAGGC TGTTTATAGT ACGATTCGTC AGATCCGTAC CATGCTAGAA ACAGACGTGG    2940

TTGCCCAGAC TGCGCGTGAA TTTTCAGGAG AATAAAAGAG ATGACAGAAA AAGAAATTTT    3000

TGACCGTATT GTGACCATTA TCCAAGAGCG ACAGGGAGAG GACTTTGTCG TGACAGAATC    3060

CTTGAGTCTG AAAGACGATT TGGATGCGGA TTCTGTTGAC TTGATGGAGT TTATCTTGAC    3120

TCTGGAAGAT GAATTTAGTA TCGAAATCAG CGATGAAGAA ATTGACCAAC TCCAAAACGT    3180

AGGAGATGTG GTTAAAATCA TTCAAGGAAA ATAGCAATCG GAGTTCCAAG TCAACGGAAG    3240

TAGATGGTTT TTAGAAATGA GAAATATCGG ACAAGCTGGT AAAATCTTGG CTGACAGTGG    3300

TTATCAAGGG CTCATGAAGA TATATCCTCA AGCACAAACT CCACGTAAAT CCAGCAAACT    3360

CAAGCCGCTA ACAGTTGAAG ATAAAGCCTG TAATCATGCG CTATCTAAGG AGATAAGCAA    3420

GGTTGAGAAT ATCTTTGCCA AAGTAAAAAC GTTTAAAATG TTTTCAACAA CCTATCGAAA    3480

TCATCGTAAA CGCTTCGGAT TACGAATGAA TTTGATTGCT GGTATTATCA ATCATGAACT    3540

AGGATTCTAG TTTTGCAGGA AGTCTAATAG TAAAAAAGTG ATTAGAAAAC ATCTTTTTTA    3600
```

663

```
AAAATAGAGA TGATTTTGAA ACAAAAAAGC TAATTCAAGA CGTTTCGATG CCAATTCAAG     3660

ATTTGGATGA AAAAAATTAA TAGATACTGT TATACTAAAC TTGTCAAGTT TGTAACAAGA     3720

CAAATATTAA AAATAAAAAA GAGGTATTCG TTATGAATAC AAAAACGATG TCACAATTTG     3780

AAATTATGGA TACTGAGATG CTTGCTTGCG TTGAAGGTGG CGGATGCAAT TGGGGAGATT     3840

TTGCCAAAGC AGGTGTTGGA GGAGGAGCAG CACGAGGTCT TCAGCTAGGA ATTAAAACAA     3900

GAACATGGCA AGGTGCAGCA ACTGGTGCTG TGGGAGGAGC TATACTTGGA GGTGTGGCCT     3960

ATGCAGCGAC ATGTTGGTGG TAATTATGGA TTTTAAAAGT TTTATTATTG GTTAGTAGT      4020

TGGTATATTT GGTCCTTATA TGGATGATTT AATTAGAAAA AAATTTTTAA AGTCTTCGGA     4080

GAAGAAAACA GAAAAATCTG TTAAAAAATA ATCAAAACTA TAAATGATGA ATCTGAATCA     4140

AAATTATTTT GCGCATGTAA AGAGGAGTCT TATAGTAACG AGTCAAAAAA GGAGTAACTA     4200

TGAATCGTAA TTTAGAACGG TGTTATCTAT TCTGACTAGG AATAGATCAT ACCAGAGGTA     4260

GCTTAGAAAT AGCAGAGACA TTAGAAATTG AAGTAATAAA TAGGATGTCG TAAGTGTTAC     4320

TATCAATGAT TTATTTGTTT CAAGCTTGCC TAGGGTGACA GTAAAAAATC AATTTCCTTT     4380

CAATAGCATA TTTTTAGTGG GCAGGACTCT TGTTCTGCCT ATTTTTTTAT CCAAAAAGTG     4440

CAGTTGGGAG GGAGATAGGC TCATTTGGGA AGGAAGTCCA GTTTTTGTTT AGTGATTGGG     4500

GTAAGATAGT TGTTATCAGA TGAGTTAATA CTCTTCGAAA ATCAAATTCA AACCACGTCA     4560

ACGTCGCCTT GCCGTATATA TGTGACTGAC TTCGTCAGTC CTATCTACAA CCTCAAAACA     4620

GTGTTTTGAG CAGCCTACGG CTAGTTTCCT AGTTTGCTCT TTGATTTTCA TTGAGTATTA     4680

GGGAAAAGGA GATGAATATG AAATTTGGGA AACGTCATTA TCGTCCGCAG GTGGATCAGA     4740

TGGACTGCGG TGTAGCTTCA TTAGCCATGG TTTTTGGCTA CTATGGTAGT TATTATTTTT     4800

TGGCTCACTT GCGAGAATTG GCTAAGACGA CCATGGATGG GACGACGGCT TTGGGCTTGG     4860

TCAAGGTGGC AGAGGAGATT GGTTTTGAGA CGCGAGCCAT TAAGGCAGAT ATGACGCTTT     4920

TTGACTTGCC GGATTTAACT TTTCCTTTTG TTGCCCATGT GCTTAAGGAA GGGAAATTGC     4980

TCCACTACTA TGTGGTGACT GGGCAGGATA AGGATAGCAT TCATATTGCC GATCCAGATC     5040

CCGGGGTGAA GTTGACTAAA CTGCCACGTG AGCGTTTTGA GGAAGAATGG ACAGGAGTGA     5100

CTCTTTTTAT GGCACCTAGT CCAGACTATA AGCCTCATAA GGAACAAAAA AATGGTCTGC     5160

TCTCTTTTAT CCCTATATTA GTGAAGCAGC GTGGCTTGAT TGCCAATATC GTTTTGGCAA     5220

CACTCTTGGT AACCGTGATT AACATTGTGG GTTCTTATTA TCTGCAGTCT ATCATTGATA     5280

CCTATGTGCC AGATCAGATG CGTTCGACAC TAGGGATTAT TTCTATTGGG CTAGTCATCG     5340
```

664

```
TCTACATCTT CCAGCAAATC TTGTCTTACG CTCAGGAGTA TCTCTTGCTT GTTTTGGGGC    5400

AACGCTTGTC GATTGACGTG ATTTTGTCCT ATATCAAGCA TGTTTTTCAC CTCCCTATGT    5460

CCTTCTTTGC GACACGCAGG ACAGGGGAGA TCGTGTCTCG TTTTACAGAT GCTAACAGTA    5520

TCATCGATGC GCTGGCTTCG ACCATCCTTT CGATTTTCCT AGATGTGTCA ACGGTTGTCA    5580

TTATTTCCCT TGTTCTATTT TCACAAAATA CCAATCTCTT TTTCATGACT TTATTGGCGC    5640

TTCCTATCTA CACAGTGATT ATCTTTGCCT TTATGAAGCC GTTTGAAAAG ATGAATCGGG    5700

ATACCATGGA AGCCAATGCG GTTCTGTCTT CTTCTATCAT TGAGGACATC AACGGTATTG    5760

AGACTATCAA GTCCTTGACC AGTGAAAGTC AGCGTTACCA AAAAATTGAC AAGGAATTTG    5820

TGGATTATCT GAAGAAATCC TTTACCTATA GTCGAGCAGA GAGTCAGCAA AAGGCTCTGA    5880

AAAAGGTTGC CCATCTCTTG CTTAATGTCG GCATTCTCTG GATGGGGGCT GTTCTGGTCA    5940

TGGATGGCAA GATGAGTTTG GGGCAGTTGA TTACCTATAA TACCTTGCTG GTTTACTTTA    6000

CTAATCCTTT GGAAAATATC ATCAATCTGC AAACCAAGCT TCAGACAGCG CAGGTTGCCA    6060

ATAACCGTCT AAATGAAGTG TATCTAGTAG CTTCTGAGTT TGAGGAGAAG AAAACAGTTG    6120

AGGATTTGAG CTTGATGAAG GGAGATATGA CCTTCAAGCA GGTTCATTAC AAGTATGGCT    6180

ATGGTCGAGA TGTCTTATCG GATATCAATT TAACCGTTCC CCAAGGGTCT AAGGTGGCTT    6240

TTGTGGGGAT TTCAGGGTCA GGTAAGACGA CTTTGGCCAA GATGATGGTT AATTTTTACG    6300

ACCCAAGTCA AGGGGAGATT AGTCTGGGTA GTGTCAATCT CAATCAGATT GATAAAAAAG    6360

CCCTGCGCCA GTACATCAAC TATCTGTCTC AACAGCCCTA TGTCTTTAAC GGAACGATTT    6420

TGGAGAATCT TCTTTTGGGA GCCAAGGAGG GGACGACACA GGAAGATATC TTACGGGCGG    6480

TCGAATTGGC AGAGATTCGA GAGGATATCG AGCGCATGCC ACTGAATTAC CAGACAGAAT    6540

TGACTTCGGA TGGGGCAGGG ATTTCAGGTG GTCAACGTCA GAGAATCGCT TTGGCGCGTG    6600

CTCTCTTGAC AGATGCGCCG GTCTTGATTT TGGATGAGGC GACTAGCAGT TTGGATATTT    6660

TGACAGAGAA GCGGATTGTC GATAATCTCA TTGCTTTGGA CAAGACCTTG ATTTTCATTG    6720

CTCACCGCTT GACTATTGCT GAGCGGACAG AGAAGGTAGT TGTCTTGGAT CAGGGCAAGA    6780

TTGTCGAAGA AGGAAAGCAT GCTGATTTGC TTGCACAGGG TGGCTTTTAC GCCCATTTGG    6840

TCAATAGCTA GAAAGAGGAG AGGATGAAAC CAGAATTTTT AGAAAGTGCG GAGTTTTATA    6900

ATCGTCGTTA CCATAATTTT TCCAGTAGTG TGATTGTACC CATGGCCCTT CTGCTTGTGT    6960

TTTTACTTGG CTTTGCAACT GTTGCAGAGA AGGAGATGAG TTTGTCCACT AGAGCTACTG    7020

TCGAACCTAG TCGTATCCTT GCAAATATCC AGTCAACTAG CAACAATCGT ATTCTTGTCA    7080

ATCATTTGGA AGAAAATAAG CTGGTTAAGA AGGGGGATCT TTTGGTTCAA TACCAAGAAG    7140
```

665

```
GGGCAGAGGG TGTCCAAGCG GAGTCCTATG CCAGTCAGTT GGACATGCTA AAGGATCAAA    7200

AAAAGCAATT GGAGTATCTG CAAAAGAGCC TGCAAGAAGG GGAGAACCAC TTTCCAGAGG    7260

AGGATAAGTT TGGCTACCAA GCCACCTTTC GCGACTACAT CAGTCAAGCA GGCAGTCTTA    7320

GGGCTAGTAC ATCGCAACAA AATGAGACCA TCGCGTCCCA GAATGCAGCA GCTAGCCAAA    7380

CCCAAGCCGA AATCGGCAAC CTCATCAGTC AAACAGAGGC TAAAATTCGC GATTACCAGA    7440

CAGCTAAGTC AGCTATTGAA ACAGGTGCTT CCTTGGCCGG TCAGAATCTA GCCTACTCTC    7500

TTTACCAGTC CTACAAGTCT CAGGGCGAGG AAAATCCCCA AACTAAGGTT CAGGCAGTTG    7560

CACAGGTTGA AGCACAGATT TCTCAGTTAG AATCTAGTCT TGCTACTTAC CGTGTCCAGT    7620

ATGCAGGTTC AGGTACCCAG CAAGCCTATG CGTCAGGGTT AAGCAGTCAA TTGGAATCCC    7680

TTAAATCCCA ACACTTGGCA AAGGTTGGTC AGGAATTGAC CCTTCTAGCC CAGAAAATTT    7740

TGGAGGCAGA GTCAGGTAAG AAGGTACAGG GAAATCTTTT AGACAAGGGG AAAGTTACGG    7800

CGAGTGAGGA TGGGGTGCTT CATCTTAATC CTGAGACCAG TGATTCTAGC ATGGTTGCAG    7860

AAGGTGCCCT ACTAGCCCAA CTTTATCCAT CTTTGGAAAG AGAAGGGAAA GCCAAACTCA    7920

CAGCTTATCT AAGTTCAAAA TATGTAGCAA GAATCAAGGT CGGTGATTCT GTTCGCTATA    7980

CTACGACTCA TGATGCCGGG AATCAACTTT TCCTAGATTC TACTATTACA AGTATTGATG    8040

CGACAGCTAC TAAGACTGAG AAAGGGAATT TCTTTAAAAT CGAGGCGGAG ACTAATCTAA    8100

CTTCGGAGCA GGCTGAAAAA CTTAGGTACG GGGTGGAAGG CCGCTTGCAG ATGATTACGG    8160

GCAAGAAAAG TTACCTACGT TATTATTTGG ATCAATTTTT GAACAAAGAG TAATGTTCGT    8220

GTTTTTAGAG TTAAATAATT TTTAAACTGT GAGAAAGATT CTTCTTGCAG TTTTTTCTTT    8280

ACAATTTTTG AAAAACATCT ACTATTTATT CGGTTAAATT CTTGTGTTTT TTGGTTTTTT    8340

GTGGTAAAAT GTGCTCAAGT AATACGAAAG GCGAACTTTA AAATGTCAAA ACAATTGATC    8400

TATTCGGGAA AAGCTAAAGA TATCTATACA ACTGAGGATG AAAATCTTAT TATTTCAACT    8460

TACAAGGACC AGGCGACTGC TTTCAACGGT GTCAAGAAGG AGCAGATTGC AGGTAAGGGA    8520

GTCTTGAATA ATCAGATCTC ATCTTTTATT TTTGAGAAAT TAAATGTGGC TGGTGTGGCG    8580

ACTCACTTTG TGGAGAAACT TTCAGACACG GAACAACTCA ATAAAAAGGT TAAGATTATT    8640

CCTTTGGAAG TCGTGCTCCG CAACTATACT GCTGGTTCCT TTTCAAAACG TTTTGGTGTG    8700

GATGAGGGAA TCGCCTTGGA GACTCCGATT GTCGAATTTT ACTACAAAAA TGATGATTTG    8760

GATGATCCAT TTATCAATGA TGAGCATGTG AAATTCCTAC AGATTGCGGG TGACCAGCAG    8820

ATTGCCTACT TGAAGGAAGA AACGCGTCGT ATCAATGAAC TATTGAAAGT CTGGTTTGCT    8880
```

666

```
GAGATTGGGC TTAAATTGAT TGACTTTAAG CTAGAGTTCG GTTTTGACAA GGATGGCAAG      8940

ATTATCTTGG CAGACGAATT TTCACCAGAT AACTGCCGCT TGTGGGACGC TGATGGCAAC      9000

CACATGGATA AGGATGTTTT CCGTAGAGGA TTGGGAGAAC TAACCGACGT TTATGAGATT      9060

GTTTGGGAAA AGTTGCAGGA ATTGAAATAA TCTGTTTGCA ACGGAAAACC TTCGTCTCTC      9120

AACTAAAAGG ACTCAGGCTG AAAAGGTCCC CCAGACCTTT TCACTCTGTA GAGAACTAGG      9180

TGAACTAACA GATGTTTACG AAATTGTCTG GGAAAAGTTG CAGGGTTTAA AATAACAACC      9240

TCAAGGCTGT TTGGGAATAT TGCAAGAGCT GAAATAAAGG AATAAGAATT GATGGATAAA      9300

CGTATTTTTG TTGAAAAAAA GGCTGATTTT CAGGTCAAGT CAGAGAGTTT GGTTAGAGAG      9360

CTCCAGCACA ACTTGGGACT GTCAAGCTTG AAAAGTATTC GTATTGTGCA AGTATATGAT      9420

GTATTTGACT TGGCTGAGGA CTTGTTTGCA CCTGCAGAGA AGCACATTTT CTCTGAGCAG      9480

GTAACCGACC ATGTTTTAGA TGAAGTATCT GTGCAGGCGG ATCTTGCTAA CTATGCTTTC      9540

TTTGCCATTG AAAGTCTGCC AGGGCAGTTT GACCAGCGTG CAGCTTCGTC ACAGGAAGCC      9600

TTGCTTTTGT TGGGAAGTTC GAGTGACGTG ACAGTCAACA CAGCCCAACT TTACTTGGTG      9660

AATAAAGATA TTGATGCGAC TGAGTTGGAA GCTGTCAAAA ACTACCTGCT CAATCCAGTT      9720

GATTCTCGTT TCAAGGATAT CACGACAGGG ATTGCCAAGC AGGAGTTTTC AGAGTCAGAC      9780

AAGACCATTC CCAAATTGAC TTTCTTTGAA AGCTATGCAG CAGAAGACTT TGCTCGCTAC      9840

AAGGCCGAAC AAGGGATGGC CATGGAAGTG GATGATTTGC TCTTTATCCA AGACTACTTT      9900

AAGTCAATCG GGCGCGTGCC AACTGAGACT GAACTCAAGG TTTTGGACAC TTACTGGTCT      9960

GACCACTGCC GTCATACGAC TTTTGAGACA GAGTTGAAAC ACATCGACTT TTCAGCTTCT     10020

AAATTTCAAA AGCAATTGCA GTCAACCTAT GACAAGTATA TTGCCATGCG CGAGGAATTA     10080

GGTCGGTCTG AAAAACCACA AACCTTGATG GATATGGCGA CTATTTTCGG TCGTTATGAG     10140

CGTGCTAATG GACGATTGGA TGATATGGAA GTCTCTGACG AAATCAATGC CTGCTCAGTT     10200

GAAATTGAAG TGGACGTTGA TGGTGTCAAG GAACCTTGGC TCCTCATGTT TAAAAACGAA     10260

ACCCACAACC ATCCAACAGA AATTGAGCCA TTTGGTGGAG CGGCTACCTG TATTGGTGGA     10320

GCTATTCGTG ATCCGTTGTC AGGCCGTTCC TATGTTTACC AAGCCATGCG TATTTCAGGT     10380

GCTGGTGATA TTACAGCACC GATTTCGGAA ACTCGCGCTG GGAAATTGCC ACAACAAGTC     10440

ATTTCTAAAA CAGCAGCTCA TGGTTATTCT TCATATGGTA ACCAGATTGG GCTTGCAACA     10500

ACCTACGTTC GTGAATACTT CCACCCAGGC TTTGTAGCTA AACGTATGGA ACTTGGTGCC     10560

GTTGTTGGTG CGACTCCCAA GGGCAATGTT GTCCGTGAAA AACCTGAAGC AGGTGATGTG     10620

ATCATCCTTC TCGGAGGCAA AACAGGTCGT GATGGTGTCG GTGGTGCGAC GGGCTCTTCT     10680
```

667

```
AAGGTTCAAA CAGTTGAGTC TGTAGAGACT GCTGGTGCTG AGGTTCAAAA AGGAAATGCC    10740

ATCGAAGAAC GCAAGATTCA GCGCCTCTTC CGTAATGGCA ATGTCACTCG TCTGATCAAG    10800

AAGTCCAATG ACTTTGGGGC AGGCGGTGTC TGTGTGGCTA TCGGTGAATT GGCAGACGGT    10860

CTTGAAATCG ACCTCAACAA GGTGCCTCTT AAATACCAGG GCTTGAATGG TACAGAAATT    10920

GCCATCTCTG AATCACAAGA ACGGATGGCG GTCGTGGTTC GTCCTGAAGA TGTGGATGCC    10980

TTCGTTGCCG AATGTAACAA AGAAAATATT GATGCTGTTG TGGTGGCGAC AGTAACTGAA    11040

AAACCAAATC TTGTCATGCA CTGGAATGGT GAGACAATCG TTGACTTGGA GCGTCGTTTC    11100

CTTGACACCA ATGGTGTGCG CGTGGTTGTC GATGCCAAAG TTGTGGACAA GGATGTCAAA    11160

CTCCCAGAAG AGCGTCAAAC ATCTGCTGAA ACACTGGAAT CAGATACCCT TACGGTTCTA    11220

TCTGACCTCA ACCATGCAAG TCAAAAAGGA TTACAGACTA TCTTTGACTG CTCTGTTGGA    11280

CGCTCAACGG TTAATCACCC ACTTGGTGGT CGTTACCAAC TCACACCAAC TGAGGCATCT    11340

GTGCAGAAAT TGCCAGTTCA ACACGGTGTG ACTCATACTG CGTCGGTCAT TGCTCAAGGT    11400

TTCAACCCAT ATGTAGCTGA ATGGTCTCCA TACCACGGTG CTGCTTATGC GGTTATCGAA    11460

GCAACTGCTC GTTTGGTGGC TGCTGGTGCC AACTGGTTCA AGGCTCGTTT CTCTTACCAA    11520

GAGTATTTCG AGCGTATGGA TAAACAAGCA GAGCGTTTCG GTCAGCCAGT AGCTGCTCTT    11580

CTAGGTTCTA TTGAAGCACA AATTCAGCTT GGCTTGCCAT CTATCGGTGG TAAGGACTCC    11640

ATGTCTGGTA CCTTTGAAGA ATTGACCGTT CCGCCAACCT TGGCTGCCTT TGGGGTGACG    11700

ACGGCAGATA GCCGTAAGGT GCTCTCTCCA GAATTTAAAG CTGTTGGGGA AAATATCTAC    11760

TACATCCCAG GTCAAGCCCT CTCTGCAGAG ATTGATTTTG ACTTGATTAA GAAAAATTTT    11820

GCTCAGTTTG AAGCCATCCA AGCTGACCAT AAAGTGACAT CTGCATCAGC TGTCAAATAC    11880

GGTGGTGTAG TTGAAAGTTT GGCTCTTGCT ACCTTTGGAA ACTATATTGG TGCAGAGGTG    11940

ACCTTGCCTG AACTTGAAAC AGCTTTGACA GCTCAATTAG GCGGCTTTGT CTTCACATCT    12000

CCTGAAGAAA TTGCTGGAGT AGAGAAGGTT GGACAAACGA AAGCAGACTT TACACTGACT    12060

GTCAACGGTG TGAAGCTAGA TGGACACAAG CTTGACAGTG CATTTCAAGG GACATTGGAA    12120

GAAGTTTACC CAACAGAATT TACCCAAGCG AAAGAACTAG AAGAAGTACC AGCTGTGGCA    12180

TCAGATGTTG TGATTAAAGC CAAAGAAAAG GTTGAAAAAC CTGTGGTTTA CATCCCAGTC    12240

TTTCCAGGAA CCAACTCAGA ATATGATTCA GCTAAGGCCT TCGAAAAAGA AGGTGCAGAG    12300

GTCAATTTGG TGCCATTCGT GACCTTGAAT GAAGAAGCTA TTGTCAAGTC AGTTGAAACT    12360

ATGGTTGACA ATATCGACAA GACTAATATT CTCTTCTTTG CTGGTGGATT CTCGGCTGCG    12420
```

668

```
GATGAACCAG ATGGTTCAGC TAAGTTTATC GTCAATATCC TGCTTAATGA AAAAGTGCGT    12480

GTGGCTATTG ATAGCTTTAT CGCCCGTGGT GGTTTGATTA TCGGTATTTG TAATGGATTC    12540

CAAGCCTTAG TCAAATCGGG TCTCCTACCC TACGGAAACT TTGAAGCTGC TAACAGTACT    12600

AGCCCAACCC TCTTCTACAA TGATGCCAAC CAACACGTGG CCAAGATGGT GGAAACTCGC    12660

ATTGCCAATA CCAACTCACC ATGGTTGGTT GGTGTGCAAG TGGGCGATAT CCACGCTATT    12720

CCTGTTTCGC ACGGTGAAGG GAAGTTTGTC GTGACGGCTG AGGAATTTGC AGAGCTCCGT    12780

GACAATGGAC AAATTTTCAG CCAATACGTT GACTTTAACG GTAAACCAAG TATGGATTCT    12840

AAGTACAATC CGAATGGTTC TGTCCATGCC ATCGAAGGAA TTACCAGCAA GAATGGTCAA    12900

ATCATCGGTA AGATGGGCCA CTCAGAACGT TATGAGGATG GTCTTTTCCA AAATATCCCA    12960

GGCAATAAAG ACCAACACCT GTTCGCATCA GCGGTTAAAC ATTTCACTGG AAAATAAGAC    13020

TTACAGATTT TCTAATAGAT AGTATCAGTA ATGTAAAAGT CATGTAAATC TAGCTCTTGA    13080

TGATTACAAA TGAAAATTAG GTATAAAAAA TGACATACGA AGTAAAATCT CTTAATGAAG    13140

AATGTGGTGT TTTCGGTATT TGGGGACATC CAGATGCTGC TAAGTTGACC TATTTTGGAC    13200

TCCACAGTCT TCAACACCGT GGTCAGGAGG GGGCAGGAAT CCTCTCCAAT GATCAAGGAC    13260

AACTGAAGCG CCATCGTGAC ATGGGGCTTT TATCAGAAGT TTTCAGAAAT CCAGCTAATT    13320

TGGATAAATT GACAGGAGCT GGTGCGATTG GGCATGTGCG TTATGCGACT GCTGGCGAAG    13380

CTTCTGTAGA TAACATCCAG CCCTTCCTCT TCCGTTTTCA CGATATGCAG TTTGGTTTGG    13440

CTCATAATGG AAATCTGACC AATGCAGCCT CTCTCAAGAA AGAACTGGAA CAAAGAGGAG    13500

CAATTTTCAG CGCGACTTCG GACTCTGAAA TCTTGGCTCA CCTCATTCGT CGCAGTCATA    13560

ATCCTAGCCT GATGGGCAAA ATCAAGGAAG CGCTCAGCCT TGTCAAAGGT GGTTTTGCCT    13620

ATATCTTGCT GTTTGAGGAC AAGTTGATTG CGGCTCTTGA CCCAAATGGA TTCCGACCGC    13680

TTTCGATTGG TAAAAATGGCT AATGGAGCAG TTGTTGTATC TTCTGAAACC TGTGCTTTTG    13740

AGGTCATTGG TGCCGAGTGG ATTCGTGATT TGAAGCCAGG TGAGATTGTG ATCATTGATG    13800

ACGAGGGCAT TCAGTATGAC AGCTATACAG ATGATACCCA GTTGGCGGTT TGTTCTATGG    13860

AGTATATCTA CTTTGCTCGC CCTGATTCTA ATATCCACGG TGTCAATGTC CATACGGCAC    13920

GTAAGAGAAT GGGAGCGCAA TTGGCGCGAG AATTTAAGCA TGAGGCAGAT ATTGTAGTTG    13980

GTGTGCCCAA TTCTTCCCTA AGCGCGGCTA TGGGATTTGC GGAAGAATCA GGCTTACCAA    14040

ATGAAATGGG TCTGATCAAA AACCAATACA CCCAGCGAAC TTTTATCCAA CCGACTCAAG    14100

AATTGCGGGA GCAAGGAGTG CGGATGAAAC TGTCTGCTGT TTCGGGTGTT GTCAAAGGCA    14160

AACGTGTGGT CATGGTGGAT GATTCCATTG TACGTGGAAC AACCTCTCGT CGTATCGTTC    14220
```

669

```
AGCTCTTGAA AGAAGCGGGT GCGACTGAGG TTCACGTTGC CATTGGAAGT CCTGCACTAG    14280

CGTATCCATG TTTCTACGGG ATTGATATCC AGACCCGTCA GGAGCTGATT GCAGCCAATC    14340

ATACGGTCGA AGAAACTCGC CAAATCATTG GTGCGGACAG TCTGACTTAT CTTTCAATTG    14400

ATGGCTTGAT TGAGTCGATT GGTATCGAAA CAGATGCGCC GAACGGTGGT CTCTGTGTCG    14460

CTTACTTTGA CGGTGACTAC CCAACGCCTC TTTATGACTA CGAAGAAGAC TATCGTAGAA    14520

GTTTGGAAGA AAAGACCAGT TTTTACAAGT AGGCGACAGA TTCTCCATTA AAGAAAAGGA    14580

AAAAATAAAT GACAAATAAA AATGCATATG CCTCACGTCT CACTACTGAC TAAAGGCTTA    14640

AGCATTTAGT CAGTAGACGC TTTGTCCTAT AGGATCAAAG CTAGAGCCCT GACTAGTATT    14700

TTTAGATAAA AAGATGGTTT ATCTAAAAAT ACGTCGCAGT CTTTCTCAAA AAAAGAAAAG    14760

GAAAAATAAA ATGGCAAATA AAAATGCGTA CGCTCAATCT GGTGTGGATG TTGAAGCGGG    14820

TTATGAAGTT GTTGAACGGA TTAAAAAGCA CGTGGCCCGT ACGGAGCGTG CAGGTGTCAT    14880

GGGAGCTCTT GGTGGCTTTG GTGGTATGTT TGACCTTTCC AAGACTGGGG TTAAAGAACC    14940

CGTCTTGATT TCAGGGACTG ACGGTGTCGG AACCAAGCTC ATGTTGGCTA TCAAGTACGA    15000

CAAGCACGAT ACCATCGGGC AGGACTGTGT GGCCATGTGT GTCAACGACA TCATTGCTGC    15060

AGGTGCGGAA CCCCTCTATT TTCTCGACTA CGTAGCGACA GGGAAGAATG AACCAGCTAA    15120

GCTAGAACAA GTGGTTGCTG GTGTGGCAGA AGGTTGTGTG CAGGCTGGTG CTGCCCTCAT    15180

CGGTGGGGAA ACGGCTGAAA TGCCGGGCAT GTACGGCGAA GACGACTATG ACTTGGCTGG    15240

TTTTGCGGTC GGTGTGGCTG AAAAATCTCA AATCATTGAC GGTTCAAAGG TGGTAGAGGG    15300

AGATGTTCTT CTCGGACTTG CTTCAAGTGG GATTCACTCA AATGGTTACT CTTTGGTTCG    15360

TCGTGTCTTT GCGGATTACA CAGGTGAGGA AGTCCTACCA GAATTGGAAG GCAAGAAACT    15420

TAAGGAAGTT CTACTTGAGC CGACTCGTAT CTATGTCAAG GCTGTCTTGC CGCTCATCAA    15480

AGAAGAGTTG GTCAACGGCA TTGCCCACAT CACAGGTGGT GGCTTTATCG AAAATGTCCC    15540

TCGTATGTTT GCAGATGACC TAGCTGCTGA AATTGATGAA AGTAAAGTTC CAGTGCTTCC    15600

AATTTTCAAA ACCCTTGAAA AATACGGTCA GATTAAACAC GAAGAAATGT TTGAAATCTT    15660

CAATATGGGT GTGGGACTTA TGTTGGCGGT CAGCCCTGAA AATGTAGAGC GTGTAAAAGA    15720

ATTGTTGGAT GAAGCAGTCT ATGAAATTGG TCGCATCGTC AAGAAAGAAA ACGAAAGTGT    15780

CATTATCAAA TGAAAAAAAT AGCGGTTTTT GCCTCTGGTA ATGGCTCAAA TTTTCAGGTG    15840

ATTGCCGAAG AATTTCCAGT GGAGTTTGTC TTTTCAGACC ATCGTGATGC CTATGTGCTT    15900

GAGCGTGCAA AGCAGCTCGG CGTTCTGTCC TATGCTTTTG AACTCAAGGA GTTTGAGAGC    15960
```

                                        670
        AAGGCAGACT ACGAAGCAGC CCTTGTCGAA CTCTTGGAAG AACACCAGAT TGACTTGGTT   16020

        TGCCTAGCAG GCTACATGAA AATCGTTGGA CCAACCTTAT TGTCGGCTTA TGAAGGTCGG   16080

        ATTGTCAACA TTCATCCAGC CTACTTGCCA GAATTTCCAG GAGCTCATGG GATTGAGGAT   16140

        GCTTGGAATG CTGGCGTGGG TCAGTCTGGT GTGACCATTC ACTGGGTGGA TTCGGGTGTG   16200

        GATACAGGCC AGGTCATCAA ACAGGTTCGT GTGCCACGAC TAGCTGATGA TACCATTGAC   16260

        AGATTTGAAG CTCGCATCCA TGAAGCAGAG TACAGGCTGT ATCCGGAAGT AGTGAAGGCT   16320

        CTATTTACAG ATTGACTTTT TGATGATTCA TATGATATCT TTGATTTTAA ATTGGAGTCA   16380

        GTGTTTGTTG AAGACGGCTT CAAACGGAGG TATTTGTAAT GTTAGAATCT AAAAAAACAA   16440

        CTCGATATGT ATTTTATGTC TATCTGATGT TATTAACTTG GGGAATCTTA TTTAAGTTTG   16500

        AAACAAATCC TGAATTTATA GCATTTTTCT TAGCTCCAAG GTATATCAAT TGGATTCCAT   16560

        TTTCAGAACC ACTAATAGTC GATGGAAAAA TTGTTTTTGC TGAAATGTTA TTTAATCTGA   16620

        TTTTCTTTAT TCCATTAGGT GTTTGTTTCC CTTTGATAAA AACTAATTTA TCTAGTTTAA   16680

        GAATAGTCGG GACAGGTTTC TTGATTAGTT TATTGTTTGA GTGCTTACAG TATATTTTAG   16740

        CAATAGGTAT AACAGATATA ACGGATTTGA CTTTAAATAC GCTAGGTGTC TGTGTAGGCT   16800

        TACTGATTTA TCAAATTTTT ATAAGAGTGT TCAAATCACA GACTAGAAAA TGGATCAATA   16860

        TCTTAGGTAT GCTTAGCCTT GGTTTTGCTT ATCTTGTTTT ACTGTTACTG CATTTACTTA   16920

        GTGTTTAACT AATGATTAAA AAGGAGAATA TAATGACTAA ACGCGTCTTA ATCAGCGTCT   16980

        CAGACAAAGC GGGCATTGTT GAATTTGCCC AAGAACTCAA AAAACTTGGT TGGGAGATTA   17040

        TCTCAACAGG TGGAACTAAG GTTGCCCTTG ATAATGCTGG GGTGGATACC ATTGCTATCG   17100

        ATGATGTGAC TGGTTTCCCA GAAATGATGG ACGGTCGTGT GAAGACCCTC CACCCAAATA   17160

        TCCACGGAGG GCTTCTCGCT CGTCGTGACT TGGATAGCCA CTTGGAAGCG GCTAAGGACA   17220

        ACAAGATTGA GCTCATTGAC CTTGTGGTGG TCAACCTTTA CCCATTTAAG GAAACTATCC   17280

        TTAAACCAGA TGTGACTTAT GCTGATGCAG TTGAAAATAT CGATATTGGT GGGCCATCTA   17340

        TGCTTCGTTC AGCAGCGAAA AATCATGCCA GTGTTACAGT TGTGGTAGAT CCTGCTGACT   17400

        ACGCTGTGGT TTTGGATGAA TTGGCAGCAA ACGGCGAAAC CTCTTATGAA ACTCGCCAAC   17460

        GTTTAGCAGC CAAAGTATTT CGTCACACAG CGGCTTATGA CGCCTTGATT GCAGAATACT   17520

        TCACAGCTCA AGTGGGTGAA AGCAAGCCTG AAAAACTCAC TTTGACTTAT GACCTCAAGC   17580

        AACCAATGCG TTACGGTGAG AATCCTCAAC AAGACGCGGA CTTTTACCAG AAAGCTTTGC   17640

        CTACAGACTA CTCCATTGCT TCAGCCAAAC AGCTCAACGG GAAAGAATTG TCATTTAATA   17700

        ATATCCGTGA TGCAGATGCT GCTATCCGTA TCATCCGTGA CTTCAAAGAT AGTCCAACCG   17760

671

```
TTGTGGCTCT CAAACACATG AATCCATGTG GAATTGGTCA AGCTGATGAC ATCGAGACTG    17820

CTTGGGACTA CGCTTATGAG TCTGACCCAG TGTCTATCTT TGGTGGGATT GTCGTCCTCA    17880

ACCGTGAGGT GGATGCTGCG ACAGCTGAGA AGATGCACGG CGTTTTCCTC GAAATCATCA    17940

TTGCACCAAG CTATACGGAT GAAGCGCTAG CCATTTTGAT CAATAAAAAG AAAAACTTGC    18000

GTATCCTTGC CTTGCCATTT AATGCTCAAG AGGCTAGCGA AGTGGAAGCA GAATACACAG    18060

GTGTAGTCGG TGGACTTCTC GTGCAAAATC AAGACGTGGT CAAGGAAAGC CCAGCTGACT    18120

GGCAAGTGGT GACTAAACGT CAGCCAACTG AGACAGAAGC GACTGCTCTT GAGTTCGCTT    18180

GGAAGGCTAT CAAGTACGTC AAATCAAATG GTATTATCGT GACCAACGAC CACATGACAC    18240

TTGGTGTTGG TCCAGGTCAA ACCAACCGTG TGGCTTCTGT TCGCCTTGCC ATTGACCAAG    18300

CCAAAGATCG TCTGGACGGG GCGGTCCTTG CTTCAGATGC CTTCTTCCCA TTTGCGGATA    18360

ACGTGGAAGA AATCGCCAAA GCAGGAATTA AGGCCATCAT CCAGCCCGGT GGCTCTGTCC    18420

GTGACCAAGA ATCCATCGAA GCAGCGGATA AATACGGCTT GACTATGGTC TTTACAGGTG    18480

TGAGACATTT TAGACATTAA GAAGATAAAA GGGAAGAAAA CAGTTTCTTT CCTTTTTTGG    18540

CTTAAAATAC TAACTGAAAC AAGATTAAAA CGAACTTTTT TGATATAATG TTGGTAAATA    18600

ATTCGCAAAA GAGGTTGAGG AATGAAACTG CTTGTTGTCG GTTCTGGTGG TCGTGAGCAT    18660

GCGATTGCTA AAAAGTTACT TGAATCAAAA GACGTGGAAA AAGTCTTTGT AGCTCCTGGG    18720

AATGATGGGA TGACTCTGGA TGGTTTGGAA TTGGTAAATA TCTCTATTTC CGAACATTAT    18780

AAATTGATTG ACTTCGCAAA GACCAATGAT GTTGCTTGGA CCTTTATCGG TCCAGATGAT    18840

GCCCTTGCTG CTGGTATCGT GGATGATTTT AACCAAGCTG GACTTAAGGC CTTTGGTCCG    18900

ACTAGGGCTG CAGCGGAGCT GGAGTGGTCC AAGGATTTCG CCAAGGAAAT CATGGTCAAA    18960

TACGGCGTTC CGACAGCAAC ATATGGCACA TTTTCAGATT TCGAGGAAGC CAAAGCCTAT    19020

ATCGAAAAGC ATGGTGCGCC TATCGTAGTC AAGGCGGATG GCTTGGCACT TGGGAAGGGT    19080

GTCGTCGTTG CTGAGACGGT TGAGCAAGCG GTCGAAGCCG CTCATGAGAT GCTTTTGGAC    19140

AATAAATTTG GTGACTCAGG TGCGCGCGTG GTTATTGAGG AATTCCTTGA AGGAGAGGAA    19200

TTTTCACTCT TTGCCTTTGT CAATGGTGAT AAGTTCTACA TCATGCCAAC GGCTCAGGAC    19260

CACAAACGTG CCTATGATGG CGACAAAGGG CCTAACACGG GTGGTATGGG TGCCTATGCG    19320

CCAGTCCCAC ACTTACCACA GAGTGTAGTT GATACAGCGG TTGACACCAT TGTCAAGCCA    19380

GTTCTAGAAG GGGTGATTAA AGAAGGTCGC CCTTATCTGG GAGTTCTTTA CGCAGGGCTT    19440

ATCCTGACAG CTGATGGACC GAAAGTCATT GAGTTCAACG CTCGGTTCGG AGATCCAGAA    19500
```

672

```
ACTCAGATTA TCTTGCCTCG CTTGACCTCT GACTTTGCTC AAAATATCAC AGATATCCTG    19560

GATAGCAAGG AGCCAAATAT CATGTGGACG GACAAGGGTG TGACTCTGGG TGTGGTTGTC    19620

GCATCCAAGG GCTACCCGCT AGACTATGAA AGGGGCGTTG AGTTGCCAGC CAAGACAGAA    19680

GGCGATGTCA TCACCTACTA TGCAGGGGCT AAGTTTGCGG AAAATAGCAG AGCACTGCTC    19740

TCAAACGGCG GACGAGTTTA TATGCTCGTT ACCACAGCAG ATACCGTCAA AGAAGCCCAA    19800

GCCAGCATAT ACCAAGAACT ATACCAACAA AAAATAGAAG GACTCTTCTA CCGAACAGAT    19860

ATCGGAAGCA AGGCAATTAA GTAAAGATAT AAGAATAACG CGCCGTAGTC GCCAAACACG    19920

ATAATGGTCG TCGTGGTGAA AAGACCAGAA CAGTGAATGT TCTGGTCAGG GGGAAACTTG    19980

GAGACCTTAG GCTCAAAGTT TAGGAATGAA ACCGAAGGTT TGCTTCCGCC TCCATCACCT    20040

AAGACCATTA TCAAAAAGAA AAATAAAAAT TCACAAAATA CGTTAATGAT CGTATGGTTT    20100

GCGAGCGTTA GCGAGCTAAT ATAGAACAAT CACCGCCGTT GTGAAAGAAC GATTGGATGA    20160

TAATCCAATC GTTCAGGGAA ATTGGAAGAC CTTGGGTTTC CAATTTAGGC ATGAGACACC    20220

TTTGGTGGCT GCTGCCGTCC CTCACAAGCT AAGGTGATTG TTGAAAAAGA GGAAAAAGGA    20280

GAAGAAATGA AACCAGTAAT TTCCATCATC ATGGGCTCAA AATCCGACTG GGCAACCATG    20340

CAAAAAACAG CAGAAGTCCT AGACCGCTTC GGTGTAGCCT ACGAAAAGAA AGTTGTTTCC    20400

GCACACCGTA CACCAGACCT CATGTTCAAA CATGCAGAAG AAGCCCGTAG TCGTGGCATC    20460

AAGATCATCA TCGCAGGTGC TGGTGGCGCA GCGCATTTGC CAGGCATGGT AGCTGCCAAA    20520

ACAACCCTTC CAGTCATTGG TGTGCCAGTC AAGTCTCGTG CTCTTAGTGG AGTGGATTCA    20580

CTCTATTCTA TCGTTCAGAT GCCGGGTGGG GTGCCTGTTG CGACCATGGC TATCGGTGAA    20640

GCTGGAGCGA CTAACGCAGC TCTCTTTGCC CTCCGTCTCC TCTCTGTAGA AGATAAGTCC    20700

ATTGCGGATG CACTTGCCAA CTTTGCTGAA GAACAAGGAA AAATCGCAGA GGAGTCGTCA    20760

AATGAGCTCA TCTAAAACAA TCGGAATTAT CGGTGGCGGT CAACTGGGTC AGATGATGGC    20820

CATTTCTGCT ATCTACATGG GCCACAAGGT TATCGCGCTG GATCCTGCGG CGGATTGCCC    20880

GGTCTCTCGT GTGGCGGAAA TCATTGTGGC ACCTTATAAC GATGTAGACG CCCTCCGTCA    20940

GTTGGCAGAC CGTTGCGATG TCCTCACTTA TGAGTTTGAA AATGTCGACG CTGACGGTTT    21000

GGATGCCGTT ATCAAGGATG GACAACTCCC TCAAGGAACA GATCTGCTCC GCATTTCGCA    21060

AAATCGTATT TTTGAAAAGG ACTTTTTGTC AAACAAGGCT CAAGTCACTG TGGCACCCTA    21120

CAAGGTCGTG ACTTCTAGCC TAGACTTGGC AGATATCGAC TTGTCGAAAA ACTATGTCCT    21180

CAAGACTGCG ACTGGTGGCT ACGATGGTCA TGGACAAAAG GTTATTCGTT CAGAAGCAGA    21240

CTTGGAAGCA GCCTATGCGC TAGCAGACTC AGCAGACTGC GTCTTGGAAG AATTTGTCAA    21300
```

673

```
CTTTGACCTT GAGATTTCTG TCATCGTGTC AGGAAATGGC AAGGAGGTGA CGTTTTTCCC    21360

AGTTCAGGAA AATATCCACC GCAACAATAT CCTGTCTAAG ACCATCGTAC CAGCCCGCAT    21420

TTCTGAAAGT CTAGTAGACA AGGCTAAAGC TATGGCAGTG CGAATCGCAG AACAACTCAA    21480

CTTGTCTGGA ACTCTCTGTG TGGAAATGTT TGCGACAGCT GATGACATCA TTGTCAATGA    21540

AATCGCCCCA CGACCACATA ACTCTGGGCA CTATTCTATT GAAGCCTGTG ATTTCTCTCA    21600

GTTTGACACC CATATTCTGG GTGTTCTCGG AGCACCATTA CCAGTCATCA AACTCCATGC    21660

GCCAGCCGTT ATGCTTAATG TCCTCGGTCA GCATGTCGAG GCTGCTGAAA AATATGTCAC    21720

AGAAAATCCA AGCGCCCACC TCCACATGTA TGGTAAAATA GAAGCAAAGC ATAATCGTAA    21780

GATGGGACAT GTGACTTTGT TTAGTGATGT GCCGGATAGT GTGGAAGAGT TTGGGGAAGG    21840

GATTGATTTT TAGGACAAGT CTATGATACA AATTATCGTT AATACATTTA TTGAAAAGTA    21900

TAAGACTGGA GCAGTTGTTG AAGTGTTGTA TGCCAGTGCT GACCAAGATA AGGTACAAGC    21960

TAAATATGAA GAACTAGCTG CACAATACCC CGAAAATTAT TTAGCTATCT ATAATGTACC    22020

GCTGGATACG GATTTGAATA CACTAGATCA TTACCCGTCT GTGTTTATTG GAAAAGAGGA    22080

GTTTGAGTAG AAATCTTGGT TTACCTAGAT AGCTTATTCC CAACAGCTTA AGAAGAAAGG    22140

AAAAATTAAC ACATGATCAA CCGTTACTCT CGCCCTGAGA TGGCGAATAT TTGGAGTGAA    22200

GAAAATAAAT ACCGTGCTTG GCTTGAGGTG GAAATCCTCT CTGACGAGGC ATGGGCTGAG    22260

TTGGGGGAAA TCCCTAAGGA AGATGTGGCT TTGATTCGCA AGAAGGCGGA CTTTGACATC    22320

GACCGTATTT TGGAAATTGA GCAGGAGACG CGCCACGATG TGGTGGCTTT CACGCGTGCG    22380

GTTTCTGAGA CTCTTGGTGA AGAGCGCAAG TGGGTTCACT ATGGGTTAAC TTCTACTGAC    22440

GTGGTGGATA CTGCTTATGG TTACCTCTAC AAGCAGGCCA ACGACATCAT CCGTCGTGAC    22500

CTTGAAAACT TCACTAATAT CATCGCTGAC AAGGCCAAGG AGCACAAGTT CACCATCATG    22560

ATGGGGCGTA CTCATGGTGT GCACGCTGAG CCGACAACCT TTGGTCTTAA ATTAGCAACT    22620

TGGTACAGCG AAATGAAACG CAATATCGAG CGCTTCGAGC ATGCGGCTGC TGGTGTAGAA    22680

GCTGGTAAGA TTTCTGGTGC GGTTGGGAAC TTTGCCAATA TCCCACCATT TGTAGAGGAG    22740

TATGTCTGCG ATAAACTTGG CATCCGTGCC CAAGAAATCT CTACACAAGT CCTTCCTCGT    22800

GACCTTCACG CTGAGTACTT TGCGGTTCTT GCCAGCATTG CGACTTCAAT CGAACGTATG    22860

GCGACTGAGA TTCGTGGTCT ACAAAAATCT GAGCAACGCG AAGTAGAAGA GTTCTTTGCT    22920

AAAGGGCAAA AAGGGTCTTC AGCAATGCCT CACAAACGCA ACCCAATCGG TTCTGAAAAT    22980

ATGACTGGTC TGGCGCGTGT CATTCGTGGT CACATGATTA CGGCTTATGA AAACGTCGCT    23040
```

674

```
CTCTGGCATG AACGCGATAT TTCTCACTCA TCAGCTGAGC GTATCATCAC ACCAGATACG   23100

ACCATTTTGA TTGACTACAT GCTCAACCGT TTTGGAAATA TCGTCAAGAA CTTGACAGTC   23160

TTCCCAGAAA ATATGATCCG AAACATGAAC TCGACTTTTG GTCTTATCTT TAGCCAACGG   23220

GCTATGTTGA CATTGATTGA AAAAGGCATG ACCCGTGAGC AAGCCTATGA CTTGGTGCAA   23280

CAAAAACAGC CTACTCTTGG GACAACCAAG TAGACTTTAA ACCACTTCTT GAGGCAGATT   23340

CAGAAGTAAC ATCACGTCTC ACACAAGAAG AAATCGATGA AATCTTCAAC CCAGTTTATT   23400

ACACCAAACG AGTGGATGAT ATCTTTGAAC GTCTTGGACT AGGTGATTAA TTAAAAAATA   23460

AACAGCGAGC TTCAATCTCG CTGTTTATTT TTTATCGAAA AGACTTAGTC TTCTTTTCTT   23520

TTAGTGAGTC CATAGGCTGC TAGTGTGGAC ATGAGTCCTG CGACTACTAG TCCTGCAGAA   23580

TCGTGAGTTC CTGTTTCAGG AAGTTTTTTC TCTGTTACCA CAGGAGCTGG ATCTTGAGGA   23640

AGAACTTTGC TTTCCTCAGC AGGAGCAGTT GATGGAGCTG GTTGGCTTGG GATTTCTAGT   23700

TTTGGTTTTT CTTCAGCAAT AGCGGCTTGT CCGTTTTCAT CGCCTACATG TGTTACCATA   23760

GTTCCGACTT CGACTATTTG AGTAACGGCT TCCTGTGCTA CGACACTATT TACAAGTGTT   23820

TTCACTTCCT TACCATCGGC AGAAGTGCTC ACAGAGTAGA AGTTGCTACG ATGTCCATTG   23880

ACGCCCTTAG TAATGACTTG TGTTTTTCCT TTGAGTAAGA GTGGATTTTC ACAAGTCACT   23940

GTGGTAAATG GAATTTCTTC TTCTTGGATA TCCAGTCTAG GTTTTACCTC AGTAGTTGGT   24000

GCAAGACCAC TTTCATCACC CTTGTGAGTT ACAGGAGCGC CAACTTCAAC CACTTGGTTT   24060

ATAACTTCTT TGGTTACCTG GCTATCAAGG ACTGTTTCTG TTGTTTTTCC ATTTTCAGTG   24120

AGTACAGAGA TGTAATGAGT TCGTTCACCT TTGACTCCTG CTGTGATAAT ATTTTCCTGA   24180

CCGGCTGGGA GGTTAGGATT TTCTTTCTTG ATAACTTCAA ATGGAATTTC TTCAGTTCTT   24240

GTGATGAGTT CTGGTCTGGT TTCAACATTG GCAGCCACTT CATTTTCATC TAGGCTTCCT   24300

GAATGAGTTA CAGCTGGTTT GAGGCCTTGA AGAGCGGCTT TTAGGTTGGC TACAAGCGTG   24360

TCAAGCTCAG CTTGTTTATT ACGGTTGAGG TTGTAATTTA GAGCTGTTTT AGCTGCGTCA   24420

AGGGCCTCAA GACTTTCTTT ACTATATCCT TCTAAGTTTG TAGGAATTTT AGCTAATTCT   24480

TCGCGGAGAG CATTATAATT AGCACGAAAG TAGTCTTTGT TGTGGTCTGC AAAGGCAGTC   24540

ATGAGTTCAA AGATTTCCTC TTCCTTGTAT TCAGCGCTTG GTCTATCTGC CCAGATTGAA   24600

AGCATACTTC CGACTGTTGG AAGATCTACT TCAGGATATT TGGTAGAAGC TAGTTGATTG   24660

AATGGTGTTT TTCCAGTATT CTCAATAGCT TTCTTGAGGA AACCACCACC ATCTTCTGGT   24720

TTTTGACCAA GAATGTAGTA CCAGTCACCG TTGGTATTCA AGAATTTATA GCCTTTGCTT   24780

GCTAGGTATT GAGGTGATGC GAGGTTATAT CCCCACCAGC CTTTAGACCA GTAAGAAATC   24840
```

675

```
AAGACATCTT TGTCAAACTG AACATCGTCC TTGTCTTCAT AGTAGAAGCC ATCGTTGAAG    24900

GCCATTGGTT GAAGCCCTCT TTCTTTGGCC ATAGCTGCGA GGGTGTTGGC ATATTCGGCA    24960

AATTTGCCAT AGAGTTGATA CCACTTGAGG TAGTACCAGC CTTGGGCACT AGTCGCATCG    25020

TTGGCGTATT CGTCAGTACC AAAGTTGAAA ATCTTTGTTT TACCTGCAAA GAAGTCCATG    25080

TATTTACCGA TGAGGGCTTT TACAAAGTTC ATCGCTTCTT CGTTTTTCAA GTCCATAGTT    25140

GTTTTTGAAA CTTTATCAAA GTGGGCTTGA GGATTTTTAA TACCTAATTT TTCCATGGCA    25200

ACCAGCATAG CATCCATGTG ACCTGGACTG TTAATAGCTG GGATGAGACC GATGTCCTTA    25260

GATTTAGCGT ATTCAATTAG CTCTGTTACT TCTGCCTGTG TTAGTGCAGT ACCGTTTGGA    25320

TCGTCGTAGT AAGCTTTAGT TCCTTCGATA ATAGCTTTTT TAACGTCATC ACTAGCATAG    25380

GTTTTTCCGT TGGCAGTAAT GGTCATATCA TCGAGTAGAA AGCGAAGTCC GTCATTTCCT    25440

AGAAGGAGAT GGACATCAGA ATATCCGAGC TCACTGGCCT TGTCTACGAT GCGTTTGAGC    25500

TGGTTCAGAG TAAAGTATTT GCGTCCAGCA TCGATTGAGA TTACCTTGTT TTTGGCAAGT    25560

TTTTCAACCT CACGTTTAGC TTCTTCTTCT TTTTGAGCTT CAGGCGTGAG GGTCAAGTTG    25620

TTGACAGTTT CTTGAAGTTT AGCAATGGCT TGATCAATCG TATCTTGTTG GGCACGGCTA    25680

AGGTTGCTAT CGAGAGAGCG AATAGCTTTT TCAGCTTCTT TTACGGCCGT GACGCTTTCT    25740

GCAGTATAAC GGTTCAGGTC TTTTGGTACC TCGTTAAGTG CTTGCTCTGC AGATTCATAA    25800

TCAGCTGCGA AGTATTCAGC GTTGGCATTT GCAAAATGAC GCATGAGTTT GAAGAGGCGT    25860

GATGGTGAAT AACGTGCAGA TGGAGTGTCA GCCCAAGCAG CTACCATACC ACCGATGATT    25920

GGGATATCAG CTCCTTCTGT TTTTGGTACA GAAGTGATTG GTGTGTTTTT AATACCATTG    25980

AGCCCCTGAT CGAGATTGTA CCAGCCTTGG CCATCAGCGT TTCGTCCAAG AACGTAGTAC    26040

CAAGCATCAT TGGTATTAAG GATTTGGTGA CCTTTTTCAG CTAGTAGTTT AGAAGAAGCG    26100

ACATCGTAGC CTCCCCAACC ACCAGTCCAC ATAGAAACGA TGATGTCTTT GTCAAAACTA    26160

CCAAAGCTTG TGTCGCTATT GTAGTAGATA CCGTCGTTAA AAGCCATTGG TTTGAGACCG    26220

TGCGATTTTA CAATACGAGC GAGGTCATTG GCGTAGGCAA TAAATTTTTC ATAGCCTTTT    26280

ACAGGGTAGC CTTCGTTTGG ATAGTATTTA TCAGCTTGAA GCACACTCCA ACCTTTAGCA    26340

TCTGTCGCAT CATTGGCATA TTCATCAAGT CCGATGTTGA AGATTTCAGT CTTTTTCGCG    26400

AAATAAGCAG CATACTTGTC GATAAGGGCT TTTGTAAAAG CGACAGCTTG TTCGTTGTCA    26460

AGATCGACAG TACGGGCTGA TTTCTTCCCA AAATAGCTAA AGTTAGGGTT TTGGATTCCC    26520

AATTCTTTCA TGGCATTGAG AATCGCATCC ATGTGTCCAG GACTATTTAC TGTCGGAATG    26580
```

676

```
AGACCGATAC CTTTATCTTT GGCATAGTTA ATCAGATCTG TCATTTGACT TTCTGTTAAG   26640

TGATTGCCGT TTGGATCGTT GTAATAATCA TTTGTACCTT TTTCAATGGC GCGTTTGACA   26700

TCGTCACTGG CATAGGTCTT GCCGTTAGCT GTGATGCTCA TATCGTCCAA CATGAAACGG   26760

AGTCCATCAT TTCCGACTAA TAGGTGTAAA TCAGTGTAGC CATAATGTTT CGCTTTATCG   26820

ATGATTTCCT TGAGCTGTTC TGGTGAGAAA TATTTACGTC CAGCATCAAT AGAAACAATT   26880

TTCTTTTTCG CTAGTTTTTC ATTTACAGTT GCAGCACGTT CCTTTCCTGC CTCTGTTGCC   26940

GGTTTGTCAG CCTCTGCTTT CGCTTCATCT TTTTTAGCTG GTTTATCCTT GTCAGTCTTG   27000

TCTGTATTTG ACTCTTTAGA ATCAACCTCT TTCGCTTCTT CCTTTTTAGG GCTAGCTTCT   27060

TCTGCCTTTT TATTAGCAGT TTCTTTTTCA GCAGAAGTTG GAGTTACCAC TTCTGCTTTA   27120

TCACTAGGAG TTGAACTAAC TTCCTCTTGT GGTTTTTCTT CTGTTTTTGG AAGACTAGCT   27180

ACCTTATCAG TAGCTGGAGT TTCTGTTTCT ACAGTTTTTG GAGCTTCTGG TTGAAGCACT   27240

GCTTTAGGTG TTTCCTCAGT CCGATTTTCG GATGATTGAG GGGAATCAGA AACCGTATGG   27300

ATGGTCGGTT GGTTTTCTGT AGTAGTAGGA GTAACTCCAT CGGCTGCAAC AGTCTGTGCT   27360

TGGAAGGCAA ATCCAATTAG AACAGAAGCT GCTCCTACAG CGTATTTACG AATAGAAAAA   27420

CGCTGTTGTT TTTCATGTTT CATTGCAAAA CCTCCTGATT GCATTGTTAT ATTGATAGCG   27480

ATTATATAAA TCAACGCCTT TATTTTATTT CTTATATTAA TTTCTTATAT TAACGAGAGT   27540

CAAGAGGAGA TGACAAAAAA CTATAATAAG TATAAAAAAA TATAAAATTT AAACTTAAGA   27600

TTTCAGATTG GTCGGAAAAA ATACGTATAT ATATCTAGTA TAATTTTTGG TTCTATTTCT   27660

ATAAAATATT CCACAAATTA TAGAATTTTC CAAAAATAGG TAAGCGCTAC CTTTTTGGTG   27720

TAGTATAATA AGCATAGAAA AAGCCCAAGC GATTAGCTCA GGTTTTCTTC TTAGTGATCA   27780

CGGTCACATG AGATAAATTT AATCTTGTAG TAATCAGATC GTTTGTAAGT TTCACTGTAT   27840

TCTAAAACTT GGCCAGTTGA TTCGAGTTTG GTGATTTTAG TTTGTAGGAC AGTAGGGAAT   27900

TGTTCATCGA CTCCGAGGAC TGAAGCTGCA TGTTCTGGAG TTGGAAAGAC TATTTCGTTG   27960

ATTTCTTCAA AGTGTTCATC ATTCATGTGA ATGTGGTAGT CTAACTTGAA ACGATTATAG   28020

ATAGAACTAT AGTATTCAAG GTTTGGATAA TTTGCGTTGA TATATTGTTC TGGGATGTAG   28080

GATGTATGGT AGATATAAAC GACACCGTTT GATTCGCGGA TACGTTCAAT CTTGTAGTAG   28140

AATTGATCGC CGCGTAGACC CAATTTTTCC AAGTAAACAA GCTTGTTTCC GCGTTCAATT   28200

GAAAGAACAG TTACCTTATC ATCTTTAGCA TTGAAGAGTT CAATATCTGA AAACTCTACA   28260

AGCTTGTGTT TGCGTGCACG TGAAACGAAG GTTCCTTTTC CTTGTTGGCG GACAATATAG   28320

CCATCTTTGG CAAGGTCGTT TAAGGCGCGA ACAACTGTGA TAGAGCTGAC ATCGTACATT   28380
```

677

GAAATGAGTT CTGCTTCAGT GTAAAATTTA TCTCCACTGC TAAACTGCCC AGAGATGATT   28440

TTATTTTTTA ATTCGTCTTT TATGTATTGA TGG   28473

(2) INFORMATION FOR SEQ ID NO: 84:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 6749 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

CCTGATGGGT GGTATGCGAG GATACAGTTC TGAAAATCGC CGTTACTTAA TTAATGGACG   60

CGAAGTCACA CCTGAGGAAT TTGCTCACTA TCGTGCGACT GGTCAATTAC CAGGAAATGC   120

AGAAACTGAT GTGCAAATGC CACAACAGGC ATCAGGTATG AAACAAGGCG GTGTCCTTGC   180

AAAACTAGGT CGAAACTTAA CAGCAGAAGC GCGTGAGGGC AAGTTGGATC CTGTTATCGG   240

ACGAAACAAG GAAATTCAAG AAACATCTGA AATCCTCTCA CGCCGCACCA AGAACAATCC   300

TGTTTTGGTC GGAGATGCAG GTGTTGGTAA GACAGCAGTT GTCGAAGGTC TAGCGCAAGC   360

CATTGTGAAC GGAGATGTTC CTGCTGCTAT CAAGAACAAG GAAATTATTT CTATTGATAT   420

CTCAGGTCTT GAGGCTGGTA CTCAATACCG TGGTAGCTTT GAAGAAAATG TCCAAAACTT   480

AGTCAATGAA GTGAAAGAAG CAGGGAATAT TATCCTCTTC TTTGATGAAA TTCACCAAAT   `540

TCTTGGTGCT GGTAGCACTG GTGGAGACAG TGGTTCTAAA GGACTTGCGG ATATTCTCAA   600

GCCAGCTCTC TCTCGTGGAG AATTGACAGT GATTGGGGCA ACAACTCAAG ACGAATACCG   660

TAACACCATC TTGAAGAATG CTGCTCTTGC TCGTCGTTTC AACGAAGTGA AGGTCAATGC   720

TCCTTCGGCA GAGAATACTT TTAAAATTCT TCAAGGAATT CGTGACCTCT ATCAACAACA   780

CCACAATGTC ATCTTGCCAG ACGAAGTCTT GAAAGCAGCG GTGGATTATT CTGTTCAATA   840

CATTCCTCAA CGTAGCTTGC CAGATAAGGC TATTGACCTT GTCGATGTAA CGGCTGCTCA   900

CTTGGCGGCT CAACATCCAG TAACAGATGT GCATGCTGTT GAACGAGAAA TCGAAACGGA   960

AAAAGACAAG CAAGAAAAAG CAGTTGAAGC AGAAGATTTT GAAGCAGCTC TAAACTATAA   1020

AACACGCATT GCAGAATTGG AAAGGAAAAT CGAAAACCAC ACAGAAGATA TGAAAGTGAC   1080

TGCAAGTGTC AACGATGTGG CTGAATCTGT GGAACGAATG ACAGGTATCC CAGTATCGCA   1140

AATGGAAGCT TCAGATATCG AACGTTTGAA AGATATGGCT CATCGCTTGC AAGACAAGGT   1200

GATTGGTCAA GATAAGGCCG TAGAAGTTGT AGCTCGTGCT ATCCGTCGTA ACCGTGCTGG   1260

678

```
TTTTGATGAA GGAAATCGCC CAATCGGCAA CTTCCTCTTT GTAGGGTCTA CTGGGGTTGG        1320

TAAGACGGAG CTTGCTAAGC AATTGGCACT CGATATGTTT GGAACCCAGG ATGCGATTAT        1380

CCGTTTAGAT ATGTCTGAAT ACAGTGACCG CACAGCTGTT TCTAAGCTAA TTGGTACAAC        1440

AGCAGGCTAT GTGGGTTATG ATGACAATAG CAATACCTTA ACAGAACGTG TTCGTCGCAA        1500

TCCATACTCT ATCATTCTCT TGGATGAAAT TGAAAAGGCT GACCCTCAAG TTATTACCCT        1560

TCTCCTCCAA GTTCTAGATG ATGGTCGTTT GACAGATGGT CAAGGAAATA CAGTAAACTT        1620

CAAGAACACT GTCATTATTG CGACCTCAAA TGCTGGATTT GGCTATGAAG CCAACTTGAC        1680

AGAAGATGCG GATAAACCAG AATTGATGGA CCGTTTGAAA CCCTTCTTCC GTCCAGAATT        1740

CCTCAACCGC TTTAATGCAG TCATCGAGTT CTCACACTTG ACTAAGGAAG ACCTTTCTAA        1800

GATTGTAGAT TTGATGTTGG CTGAAGTTAA CCAAACCTTG GCTAAGAAAG ACATTGACTT        1860

GGTAGTCAGT CAAGCGGCTA AAGATTATAT CACAGAAGAA GGTTACGACG AAGTCATGGG        1920

GGTTCGTCCT CTCCGTCGCG TGGTTGAACA AGAAATTCGT GATAAGGTGA CAGACTTCCA        1980

CTTGGATCAT TTAGATGCTA AACATCTGGA AGCAGATATG GAAGATGGCG TTTTGGTTAT        2040

.TCGTGAGAAA GTCTAAGACA GAATTTTGAG GATAAAAAAG AAGGAGCCAG CTGAAAAAAA       2100

CTGGTTCCTT TTTAGGTACG ACAGGCATGT CGTATAGTAG AAGTGTATTA TTCTAGTTTC       2160

AATATACTAT AGTAGCTCAG AAGTCGGTAC TTAAACGTGC TATATCAAAA CCAGTCCTGG       2220

AAAAACGTGG ACTGGTTTCG TGTTTGGATT ATTACCTTGA ACGACATGCG TTAAAAGTTA      2280

GTTGAACCGC CGTATGCCGA ATGGTACGTA CGGTGGTGTG AGAGGGGCTA GAGATTATCC      2340

CCTACTCGAT TTTAAATCAC ATGACGTTCA AAGGCATCAT CTGAAATCCC TTGTTCCAAG      2400

ATGAGTTTTG CCCATTCTTT AGCAGAGAAG AGGCTGTGGT CCTTGTAGTT TCCGCAAGAT      2460

TCGATGGTTG TCCCTGGGAC ATCTTCCCAA GTAGTAGTTT CAGCGATTTC CTTGAGCGAA      2520

TCCTTGATAA CAGCTGCGAT TTTAGCACTG GTGTGACGTC CCCACATAAT CATGTGGAAG      2580

CCTGTGCGGC AACCAAATGG TGAACAGTCA ATCATGCCGT CAATGCGGGT ACGGATGAGT      2640

TTGGCTAAGA GGTGCTCGAT AGTGTGAAGG CCGGCAGTAG GGATAGAGTC TTCGTTTGGT      2700

TGCACCAAGC GAATATCATA ATTGGAGATG ATGTCTCCTT TTGGTCCTGT TTCTTCCCCA      2760

ATCAAGCGAA CATAGGGTGC TTTGACAATG GTGTGGTCAA GTTCAAAACT TTCGACAATA      2820

ACTTCTTTTG ACATGGTAAA TCCTTTCAGT TTTCTTCTCT CATTATATCA TAAAGGTTGC      2880

TCCTGAGACA GAGAGAAAAC CTCTCCGAGG CTGGAGAGGT TGAAATCTTT ACTTACGATA      2940

TAAGCGGTCG TATTGGTAGT ATGGGTCAAA GGTTACGTTG ATACCCAGTT TACGAAGGAC      3000

ATTCTTGTCT TCATCAGTCA AGATGATGGT TGAGTGGGCT TCGCTTCCTT TGAGGTTGCC      3060
```

679

```
GAGTTCTTCC ATAGCGCGGG CAGCATCAGG ATTTTCTGTA GCTGTGATAG CAAGTGCAAT    3120

CAGGATTTCA TTTGAATGAA GGCGTGGATT GCGGCTACCG AGATGATCGA TTTTAAGACC    3180

TTGGATTGGC TTAACAACTT CAGGCTCGAT TAGTTTTACT TCTTTAGCGA TGTCAGCTGA    3240

TTTTTTGATG GCGTTGATCA AGGCAGCGGC TGTAGGACCA AAGAGTTCTG AGTTCTTACC    3300

AGTGATGATT TCCCCATTTG GCAATTCAAA GGCTAGGGCT GGTCCACCAG TTTCTTCTGC    3360

TTTTTGGCGC GCAACGACAG CAACCTTACG GTCTGCAGGT GTGATACCGA GGTCGTTCAT    3420

GAGCAACTCA ATTTTCTTGA CGGCAGCTTC GCCAACTTTT TCAGCTTTGA AGTCAAGAAC    3480

TGTTTGATAG TAACGGCGGA TGATTTCTTG TTTAGAAGCT TCGACAGCGG CCTCGTCATC    3540

TGTAATAGCG AAACCAACCA TGTTGACACC CATATCTGTC GGTGAAGCGT ATGGTGATTT    3600

TCCGAGAATA CGTTCCAACA TGCGTTTGAG CACTGGGAAG ATTTCGATAT CACGGTTGTA    3660

GTTGACAGTG GTTTCTCCAT AGGTTTGAAG ATGGAAGGGG TCAATCATGT TGACATCATC    3720

AAGGTCAGCT GTGGCAGCTT CATAAGCCAA GTTAACTGGA TGATGAAGGG GAAGATTCCA    3780

AACAGGGAAG GTTTCAAATT TAGCGTAGCC AGATTTGATG CCATTGATTT GGTCGTGGTA    3840

CATATTGGAC ATACACGTTG CCAATTTTCC AGAACCAGGT CCAGGAGCGG TTACGACAAT    3900

CAAGTTGCGA CTGGTTTTGA TGTAGTCGTT TTTGCCCATG CCTTCTGGGG AAATGATGTG    3960

ATCCATATCC GTCGGATATC CTTTGATTGG ATAATGAAGA TAAGAATCAA TTCCGTTTTT    4020

CTCAAGTTGA TTGCGGAAGG CATCTGCAGC GGGTTGGCCA GCGTATTGTG TAATGACAAC    4080

GGAACCAACA AAAATCCCTA ATTCATTGAA TTTATCAATC AAACGAAGAA CTTCTTGGTC    4140

ATAAGAAATG CCTAAGTCGC CACGTGCTTT GGAATGTTCA ATGTTGCTAG CATTAATGGC    4200

AATCACAACC TCAACCTGCT CTTTCAATTC TTGCAAGAGC TTGATTTTGT TGTCAGGTTC    4260

ATAACCAGGA AGGACACGAG CAGCGTGGAA ATCTTCTAAC ATTTTACCGC CAAACTCTAA    4320

GTAGAGCTTG CCGTCAAATT GGTTAATGCG CTCCAAAATA TGGTCGCGTT GTAAATTCAA    4380

ATATTGTTCA GAACTAAAAG CTTGTTTTTT CATTTTTTTA CCTCTGGACT CTATTATAAT    4440

AAAAAATTGG AAGTTAGGAA ACTACGGAGC TAAAAAAGAA ATTAAAAAGA TTAAGCAAAC    4500

GCTTGCACAA AATTTTAAAA AGTGCTATCA TAGACTATAG ATTATGAAAA TAATGAGGTA    4560

AACAGATGCA AGAAAAATGG TGGCACAATG CCGTAGTCTA TCAAGTCTAT CCAAAGAGTT    4620

TTATGGATAG TAATGGAGAT GGAGTTGGTG ATTTGCCAGG TATTACCAGT AAGTTGGACT    4680

ATCTAGCTAA GCTAGGAATC ACAGCAATTT GGCTTTCTCC CGTTTATGAC AGCCCTATGG    4740

ATGATAATGG CTATGATATT GCTGATTATC AAGCGATTGC GGCTATTTTT GGAACCATGG    4800
```

```
                                          680
AGGACATGGA TCAGCTGATT GCAGAAGCTA AGAAGCGTGA CATTCGTATC ATCATGGACT      4860

TGGTGGTCAA TCATACCTCA GATGAACATG CTTGGTTTGT CGAAGCCTGT GAAAATACTG      4920

ACAGCCCTGA GCGAGACTAC TATATCTGGC GCGATGAACC CAATGACCTA GATTCTATCT      4980

TTAGTGGGTC TGCTTGGGAA TACGATGAAA AGTCAGGTCA ATACTATCTC CACTTTTTCA      5040

GCAAGAAACA GCCGGATCTC AACTGGGAAA ATGAAAAACT TCGCCAGAAA ATTTATGAGA      5100

TGATGAACTT CTGGATTGAT AAAGGTATTG GTGGTTTCCG TATGGATGTT ATTGACATGA      5160

TTGGCAAAAT TCCTGACGAG AAGGTAGTCA ATAATGGTCC TATGCTCCAT CCCTATCTCA      5220

AGGAAATGAA TCAGGCGACC TTTGGAGATA AGGATCTCTT GACAGTAGGG GAGACTTGGG      5280

GAGCAACTCC AGAGATTGCC AAGTTCTACT CTGATCCAAA GGGGCAAGAA TTGTCTATGG      5340

TCTTCCAGTT TGAACATATC GGTCTTCAGT ATCAGGAAGG TCAGCCTAAA TGGCACTATC      5400

AAAAAGAGCT GAATATCGCT AAGTTAAAAG AAATCTTCAA CAAATGGCAG ACAGAGTTAG      5460

GAGTTGAGGA CGGCTGGAAT TCCCTCTTCT GGAACAACCA TGACCTCCCT CGTATTGTCT      5520

CAATCTGGGG AAATGACCAA GAATACCGCG AAAAATCTGC CAAAGCCTTT GCAATCTTAC      5580

TTCATCTCAT GAGAGGAACT CCTTATATCT ACCAAGGTGA GGAGATTGGG ATGACCAACT      5640

ATCCGTTTGA AACACTGGAT CAAGTAGAAG ATATTGAATC TCTCAACTAT GCGCGTGAGG      5700

CTCTTGAAAA AGGTGTTCCG ATTGAAGAAA TCATGGACAG TATCCGTGTT ATTGGACGTG      5760

ACAATGCCCG TACCCCTATG CAATGGGACG AGAGCAAAAA CGCTGGTTTC TCAACAGGTC      5820

AACCTTGGTT GGCGGTTAAT CCAAATTACG AGATGATCAA TGTCCAAGAA GCGCTGGCAA      5880

ATCCAGATTC TATTTTCTAT ACCTATCAGA AACTGGTCCA AATTCGCAAG GAGAATAGCT      5940

GGCTAGTTCG AGCTGACTTT GAATTGCTTG ATACGGCTGA TAAGGTCTTT GCTTATATAC      6000

GTAAGGATGG CGACCGTCGC TTCCTAGTTG TGGCTAACTT GTCCAATGAA GAGCAAGACT      6060

TGACAGTAGA AGGAAAAGTC AAATCTGTCT TGATTGAAAA CACTGCGGCT AAAGAAGTAC      6120

TTGAAAAACA GGTCTTGGCT CCATGGGATG CTTTCTGTGT GGAATTACTA TAAATATTTT      6180

TTGCAGAAAA ATTTAAAATT GAAATCGTAT AAAAACAAGG GAGGACTGTA TAAAAGACAG      6240

AAATCCTTTG TTTTTTATAA CCAAAGTTTA TAAACTTTCA TTCTTGAAAT TCAATTAACT      6300

TTACAAATTC CCACTATTAA GGAGAAAGAA GATGAACATA AAGAAGCGTG TCCTTAGTGC      6360

AGGCCTGACT TTTGCATCTG CTTTGCTTTT ACCCAAATCA TTCATACCTC TCTCAACTAG      6420

ATGTAACTTA CAAAACCCCT GACCTCATGA GCCACTTTCT TCCTCCTCAT GAGGTCAGTT      6480

TTACTTTCTG CTGTTCCAGT ATCGTTTTTC CTCGCTAGAT TTCCTCAAAA GGGCAGACTC      6540

CTCCCTTGGT GCGTCACACG ATTTTTTCAT CTCGACTGTT CTTTAATGCA TCATTAACGA      6600
```

681

```
CGCTTTTCTT CTAGGTGGTT CATAAGGAAC AGGAAGATTC AGGTTGACTT TTCTAATCCT      6660

AGAATAAAGT GCTGAAAACA ATTCGGAATA GGCATAGAGA CTAGACAATT TGAGGAGCTG      6720

CTTGCGTCCT GTTCGAACAC ATTTTCCGG                                       6749
```

(2) INFORMATION FOR SEQ ID NO: 85:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 1842 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

```
TCTACCCATG GACTTTGAGG CATTCATTGT TCCATCTTCT AGTGGCGAAT CTTTTGATAC        60

AAACGATTCA ATTCACTTGG ATAGTGAAAC TCTCCCGCAA ACATTTTTCT GGTTAACTCA       120

ATCCAGCTGA TATTTCTTTC AGCCAAAATA ATGGACAAGT TCTCCCAAAA TCGTTCAGCC       180

ATATTGCTTC TCCTTTAGTT AGATAAATAA TGTGTTTGCG CCATGTAAAT CAATTGTTTC       240

GTATCTCTTG GCAATAGAGC TCTAGCCTCT TCCAAATTCA GACTTGGATA AACTCGCTTA       300

TTTGAAACCG CAAGAGGAAG TCTGATGGTT AGTTCAGGAT TTTTTAAAAT TATCTCAACG       360

AAATCCGTTA ATCTTAGATT GTCACGGTTC TTAAATCGTA ATAAATTGGG AGATAAAAAC       420

TCAAACAAT CTGAAGAATA GCTCATCATC TCAATTAATT TGTCCTTTGT CATTTCAGAA       480

ACTGAATGAC AAGATACCTC TATGCCATAG TTTTGGAAGA AATCTAAAAG AAGTTGATTT       540

CTTTGTCTAT TTTTACTTAG ATAGAGATCA ATCATGGGAG ACCTCCCAAA GATTCGGTTC       600

CATTTGATAT TCTGACACGA TTAAGGAATC TAATAAATTA AGGAATCTAA TAAATTTGCG       660

AAGTTAATCG GTTTCTTGTC TTCATCATAA GCTTTTACAG TTACTTGGGT TGTAAGTATT       720

CCCTCTTTTC CCTCGGCTCG ATAGCCTTGT CCATATAAAA CAAAAACGAG ATTTTGATGA       780

TCATCTACAA AGGCATCAAC CCCATTCTTT ATGTCTTGAC TTTCAAGGAA TTCCATAACG       840

TTTTGAAGAT AGGATTCGTA AAATAGTGGG TAGTTATGTT TTTTATGGTA ATCATCTAAA       900

AATGTCACTT CAAACTCACA TGGAGAGTAA TTTTGACTTT GAACAGCCTA AAAGTGCCAT       960

CAAATTTGAA TTGGAATAAA TCAAATAAAT AGCCCCATCC TCATCAATCC AACCTTTGCT      1020

CAAAGACAAC TCCAACCGAT CTTTTAAAAC TGAGTAAACC ACCTTAACCT CCAGTTTCAT      1080

ATTCTTATAC CGTTCACTCT CAAATAAAAG TTTGGGGAGC TTATAATAAC GCTCTGATGT      1140

CTGATATTGA TTAGCGGTAA TACGCTTCAT TATTGTCCCT CCAAGACTAA AATTCCAACA      1200
```

682

```
TTTCCAAATT CATCAAATCG GATTAAACCT ACTTGTTCCA TTTCATCAAC TAACTGAGTT      1260

GCTTTTACCC AAATCATTCA TACCTCTCTC AACTAGATGT AACTTACAAA ACCCCTGACC      1320

TCATGAGCCA CTTTCTTCCT CCTCATGAGG TCAGTTTTAC TTTCTGCTGT TCCAGTATCG      1380

TTTTTCCTCG CTAGATTTCC TCAAAAGGGC AGACTCCTCC CTTGGTGCGT CACACGATTT      1440

TTTCATCTCG ACTGTTCTTT AATGCATCAT TAACGACGCT TTTCTTCTAG GTGGTTCATA      1500

AGGAACAGGA AGATTCAGGT TGACTTTTCT AATCCTAGAA TAAAGTGCTG AAAACAATTC      1560

GGAATAGGCA TAGAGACTAG ACAATTTGAG GAGCTGCTTG CGTCCTGTTC GAACACATTT      1620

TCCCACCACG TGAAGAAAAA GATGGCGGAA GCGTTTGATT GTTAAAGTTT GGAAGTCACC      1680

TCCAGCTAGA TGTTTGAGAA AAAGATAGAG ATTGTAGGCG ATACAGCTCA TCATCATACG      1740

AACTTCGTTT TTGATTAAGG TTGAACTATC CGTTTTATCG CCAAAAAATC CCTCCTTCAT      1800

CTCCTTGATG AAATTCTCGG CTTGACCACG TCCACGATAA AG                        1842
```

(2) INFORMATION FOR SEQ ID NO: 86:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 19390 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

```
TCATCTTTAT CTCCTCGAAA TTTTCTAATA TAGCCATTAT AACAGAATTT TGTGAAAATT        60

CCTATTATAG TAAATCACTA TTTCAGTATA AAAAGAAAAA ACGAATCAGA CGATTCGCTC       120

TTCTTAAAAT CTGAAAATAG CTTTCCAGAA AGGATTAGCC GATTTTTTGC AGATTGAGCA       180

CTGCATCGTG ACTCATCAAG ACTTGACCAT ACTCTTGTAA GACTGAGCGA CTGATATCAC       240

TATCGTCTGC AAACTCGCGC ATACGGGCCA ACAGCCAAGC TGGATATGGG CTTGGATGAT       300

TTTCAATATC CACTAAAATG GTCAAATAAT AGCGCTCGTT CATTTTGTAG AGTTCAGAAG       360

TTTCCATTTC AAAAGTCACT GTCTTGGCAA AAGCTACCAA GTCAGCCAAC TTAGCAAAAG       420

AAAGGATGTA GTAGATGTAA GGTTCTTTCT TACTCTCAGC TTCTTGTTCA GCCTGCTCTT       480

GCTCTTCTTC CTTGACTTCA ACTTGCTCAA GAGATTGAAT GGCTTCGATA TCATCCTTGG       540

TTTTGTCTGC GATGCTTTTT TCCAGGGTTT TGATAAATTC ATCTGGAGAC ATTTGAGCCA       600

ATTCTTCCAT ATCTGGCAAA TCCGATAAGT CTTCAAAATC TAGATTTTGG TCAATCTTTG       660

ACTTGGTCAC AAAGACATCT ACCTTATCAG GTTTTGGAGT CACACGGAAG CTCAACATGC       720

CTGTATCCAG AAAGCTATCA GGCATCTCTA GCTCATCCAA GATAGCATAA AAGAACTCTT       780
```

683

```
CTGTTTTTTC TTGAGGAACG AGAAAGTCAG CAATCTCCAT TCCACGATCC ATCAAATCCT    840

CTAAAGATAT CGTGATTTTT AAAGTTGTAT CACTAATTTG TTTCATTTTC ATTGCTAGTA    900

ACCTCATACT TTCAGTTCTA TCTATTATAC TAGATTTTTA CGATTTTATC AAAAGAAGGC    960

TCCTCTATAC GGATAGATTT TCCCTAGGGT CTTTCTATAG GAGACTCCAA AAGAAAATTT    1020

CTGCAGACAG ATAGAAAAAG CCTTCAAAAT CGGCTAAGAG CCGACTTTGA AGACCTTATA    1080

CATCAGAATA CTTATAATTT AAAGGTTGCT ACACCGAGGA TAGAACGATT TAAGTTTCTG    1140

AGAATTTGAA GACTTTGCTC AAATTTCTTA TAACGAGTCA CTCCGTACTC TTCAACAAGA    1200

AGGACTGTAT CTCTTTCCAA AAGAGATGAT ACATCCTGTA AATCTACAAA ATGCATTCCT    1260

TTTAAAGCTT CTTGACTCTG TTTCAATTTA TCTAAGATAG CTTTATTTGA GCTAACGATG    1320

GTCAATTCCT GTCCAGTATT TTTGTATGAC AAAACATCTG CTAGGTTAGC AATTGTTGTA    1380

ATCTCTGTTA CAAAATCAAT TTGATACTGA GAAAAATCAC CTACTCTATT GATTGTTGGA    1440

TTAAAGAGAT AAACTAACAC ATTTCCCATC ACAACCAAAA TCACACAAAC CACTCCAATA    1500

ACAACTAAAC GAAGAATCAG ATTTTTCACA TTTAAGCCAA GCGCTGTTTC ACCATTTGCG    1560

TTCAATTCTT TAGAGTTGAT GGTTTCCAGT TTTTCAATTT TCACATTTGC ATAGGCATGT    1620

TTAAATTTCT CAATCAACCC ATCAATTTTT TTCTCTAACA AGTTATTGGC ATCTTTACTT    1680

GATGTCAAAA TTTTCACACC AACCCCTGCA TCGTCAATCA TATAGTAGAC GGTCAATTTT    1740

TTCCACCAAT AGTCATTCGT TGAATTTTTC AAGGTTGTTT CTGTCGTGTC TAATTCACTG    1800

GCAATTTTTT TCAACTCACT GGGTTCTACA TCATTGAAAA GATAAGCTCC ATTCAAATTA    1860

CCATCAATCA ATTTCCCATA AAAATCACTA TAACCACCAA TTTGATGATT CAAAATCGTT    1920

TTGTCCGACT CTTTTGGAGG AGTGATTTTA TAGATAAGAT AAGTTGAATA ACTTGTTGTA    1980

TCTTTGACAG TGTTTTTATT CCTAACTGCT TTAATTGTAA ATGGTACAGC AATGAGAGCA    2040

AATAAAGCGA TGAGAGCTAA AATATTTGCT TTTCGCTTTT TATAAAGATT TGCAAACAAA    2100

TCAGCTACTG AATAATGTTC AAACATGATT TTTTTCTCCT TTGTTTAGTA GATACTAGTT    2160

TTCCTTTGTA AGCATTTTTG CTACAAATAT AATCACAAGA ACAATTCCCC AGAATTGCAT    2220

TGTAAATAAA TTGAAGAAAC TTTCTGAAAA GCTGCTTCTT GGCATAAAGA ATAGATTATT    2280

CAAGATGAGT AGGGATAAAG CAAATAGGAT TGTCCTTGAG CGATAGGCTA CTTGCAGCAT    2340

GGCTATAAAT AATACGCCGA GTAAGAAACT AAGCAGAAAG ACTCCAATCA TACCATAGTC    2400

GGTATACAAC TCCATGATAT AACTACTTCC GATACCATGC CCTTTCAAGT ATTCCTTGTT    2460

CAAGACAAGA TAGGATAGAT TGTGGGCATA ACTATTACTA TCAATAGCTA GTTCCACACT    2520
```

684

```
ATTGGTTGTA TGTTCAAAGG CTTTTCCTCC GAAAATGGCT CCCAAACTCC CCCTTGCAAA    2580

ATAATCAAGA ACAGGACCAA AAGTAAAATT ACGGAAATCT CGGTAAGGGA GGCTACTGTT    2640

AAATAGAAAA CCTCGAGCCA GAACACCAAA ACTAGTCCCT TGTTTATAGA TAAAGTCAAG    2700

TAAGATATCC CAGAAACCTG TATGGGAAAC TTGGACATTA TCCCGTACAT AATTGAGTAC    2760

TCCCATCGCT AACATGAGAA TAGGAGAACC TACAAAAATC GCTAACTTTT CTTTAAACCC    2820

AATCCATTTT CCTTTTTCAG TTTGCTCCCG CATAAAGTAA TAAACAAAAG CAAATmAAAT    2880

ACTTAAAATA AAGGGATTTC GTGTCCCAAT TGCCAAATGA ATAGTATTAG CTGCAATAAA    2940

GGAGACAAGC ACTGCTGTGG CCTGCAATTT CTTTGGCTTG GTTGCCAGAT ACATACACAT    3000

TGCATAGACC GTAAAGGTAG ACAAAATGTA GGTAAAATAA GGCAGTTTAC TTTCAAAATT    3060

TGCATAGTAG GCATAGTAGG AAGTCTGCAA ACGATACAAG AGCCGTTCAA ATAACCGAAT    3120

GAAATAGAAA GGATAAGTTA GAAGAAAAAC TCCTAGTGAT ACAAAGCGTA ACCGCTTGAT    3180

ATAAACCTCT TTTAGAGAAT TTCCTATATT TGCTACTTTT ATTTTCTTCC TAGCTATGAA    3240

GTAACGAGCC AGAATGCCTC CTGTGGTCAA GCCCAGAATC GAAATCATGA CAACTATAAA    3300

GGCAAAACGA TAGGCTATTG GATGATAGGT ATCCAAAGCA CCATCCCTAA AATAATCAAT    3360

GGTCGGTCTT GATACCAGAA ATACAAAAAT GGTTAAATAG AAAATAAAAT GGATTAAGTA    3420

ATACTTGATA TCATTCCAAC AAGCAATTAA GCTACTAACC AACAAGAACA ATAAAGTAGA    3480

AAGTAAGCTA ACATTATTAT TATTAAACAG ATACACAATT CCACTTACTA GCGTCAAGGC    3540

ATAACTGACT ATGGTCAAAC TAAATAATAA TCGTTTCCCA TCAATCACTT GGTCACCCCC    3600

GTTCTAATGT AATTTTTTAG ATTTTTCAAT ATTTTTCAGT AATAAGAATC GATATAAGGA    3660

AATATTTATG AATAGGGCCA AAGCACTAAT TCTTCTCCCC TTACGGAAAA TTGGATTCCT    3720

AGAAATAGCA AAGGCATGGC CTTTTAAAAA ACGATGAATC TGAGAATAGG CTTCAAACTG    3780

TTTATACTGA TCATCTAGCA ACATCTTATC CAGAATAAAG AAGTGGGCAT AGGCCAATCT    3840

GAAAAAAGCG ACCTCTTTCA AGTCAGGATA GTTTTTCACA ACTTCATTAT AAAACTTTTG .   3900

GTAGATATCA ATATAGGCTA AATCCTTCTC TGCATAGGGT TTGGTCGTAA TACTATCCCC    3960

TCTATGGAAA TAGTAATAAT AGGGTTTAGT ATTAACCACA TACTTCTTGG CCAACTTGAT    4020

TAAATCAAAA TGGTAATAGG CATCTTCGTA AATCAACCCC TTAGGAAAGG ATAGGGCAGT    4080

TGCAATCTGT CTCTTGATTA GCTTATTGCA AATCGTCCCA GGTATTTTTT CACCTATGAG    4140

GTATTCCTTT AGAAATGTTT GAGAATCACA GACAAAATAG TCATCCTGAT TGGCTGACTG    4200

TGGGCTTTCA TCATTAGCAT AGACATTCAT GACACCACAG CTCGAAACAT CCGCATCTTC    4260

TTGAACTAAT TGCTCATATA AGCTCTGAAT CATTTCTGGA TGGATATAAT CATCTGAGTC    4320
```

685

```
AATAAAAATC AGATAATCCC CGTGAGCCTG CTTCATCCCA TCATTTCGTG CTTGCGACAA      4380

TCCTTCGTTC TTTTTATGAA GCACTGACAC CCTGTCATCT TGTTCAGCGA TTGAATCACA      4440

CAAGCGACCA CTTTCATCTG TTGCACCATC ATCAACAAGA ATAATTTCCA GATTTTGATA      4500

GGTCTGCTTC TGAATGGAAG CTATCGATTT TTCTAGGTAC TGCGCCACAT TATAGACTGG      4560

CACAATCACA CTAATTAATG CAGTTTCCAT GCTACTCCTC TAATAGTTTT TCTACTTGTT      4620

CGATTTGTTT TGTAATTGTA AATTGTTGAA TGAATTGGCT AGCCTCATCG ACATCAAAGT      4680

TTGAGGCAGA AGTCATGTAA TTAGTAATCG CCTGAGCTGC CTCTTGATTG CTCTCAATGA      4740

TTTGTCCAAA TCGTCCTTCT TGGGATAATT CCTCAGCCCC TCCAACGTCC GTAGAGATAA      4800

AAGGGAGTCC CAGACTCAAG·GCCTCCACAT ACACTCCAGG AAAACCTTCT TGTTTAGACA      4860

TAGACAAAAG AACTTTCGTC TGAGATAGAT ACTGATAAGG ATTTTTTTGA TAACCAAGGA      4920

AATGTACATA GTCCTCAATC CCATACTCTT TGACTCGTTT TTTCAGTTCC TCTTCCATAT      4980

CACCAGCCCC GATAAAATAG AGATGATAGT TTTTTCCCTC TTGGTGTAAT AATCGTATCA      5040

CTTCCACTAC ACGGTCAGAA CCCTTATTTT CCTCAATCCG TCCGATAGTA CAGATACTTT      5100

GAGGAGCAAT CTCGATATCG ATCTTCTCTT GAGATTTTTC TAGAATAGTC TGAAAATCAT      5160

ATCCATTGTA GATTGTCTGT AATTTAGAAG TATAATCTGG ATAAACTTCC TTGATAGAAT      5220

TGCTGGTCTT TTTTGAAATC CCTACAATTG TATTCGCAGC ATCCAACTGG CTTCTATGTG      5280

ATTCTCTTTT AGAGCTATCC TTAAGAAGTT CTTCAATACT TCCATGAATC CAAGATATCT      5340

TCTTGACTTC TCTTCTTTTA GAGAACAACA GTGGTGGATT CATAATGGTA AAAGAAACTT      5400

CAACATCATA ATCATCTTTT ACAAGCAAAC GACGAGTCAG TCTTGGAAAA TAAATTCTCA      5460

TTCTCCACAA AAAAGCTCGT AACCATCTGG TTTGGCGATA ATCTTGAAGG GATTTTAAAA      5520

TGCGTACATG CTTTGGAACA GATTCATATC CCTTGTCAAA GTGCTCCATT TCAAGAATAT      5580

CAATATCATA CTTTTCTGGA TCCAGATTTG AAACAATGGT TGATAGAATC TTCTCTGCAC      5640

CACCTCCAAG AGAAAAAGAC CACATAAAAA ATAAGATTTT TTTCTTAGCC ACCATATTCT      5700

CCCTTGTATT CTGTATAAGA CTTATCCATA TCAGCGATGA CAGCATCATG ATGCGGTACC      5760

TGCTTGTCTG CTGGTGGAGG CGTCATATAA TCCCCAAAAG CAGTTCTGAG ATAGACATCA      5820

TAGCCGATTG GAATAGGCAT CTCTGTTCCT TCAAATGGCA AGAAAAGATT GTCTTCAAAA      5880

GATGTGATTG GGTACTTGTT TCTCATGTAG CCAGGACCTG AGCATAATTC TGTAATGCCA      5940

TCACAATCAG CCAAATCATA CTTAGTCATT TCTTTCTCAG CTTTTTTCCA GATGCGATAA      6000

CGGAGAGATT TTGGAGTCAA ACCCAGTAAA ATGCGACTTC CCCATTTCAT GAGATCACCA      6060
```

686

```
TGCTTTTCTG GAATAGTTTG CGCACAAAAG AGTGAATAAA TCAAGGCCCA ACGAACCTGT      6120

TTTTTCCGCT CAGCTGGATT TTTCGGATAA TAATCCAAAG GCAAAACATC CAAGGCCAGA      6180

CCATGTGGCA AATCCAAATC CTGCTGATAA GGCTTGATAC AGGTGGTTTT CTTGTCACGA      6240

ATGGTAATAA AAAGATTACG ATCAACAAAA TCCTTGTGAC TCTTTGACAA GAAATAACGT      6300

TCATCTGCAT AACGAGGCCA TAATTCTGCT AATTTCTCAT AATCTTTACG AGGCATAAAA      6360

AAGTCTAGGT CGTCGTCCCA AGGAATAAAT CCCTTGTTTC GAAGGGCACC AATAGCGCCT      6420

CCGCCACAGA GATAACAGAG CAAATCATGT TCTTTACAAA AGGCCACAAA ATATTCAGCC      6480

ATCTCCAGAC TACGAGCCTG AATTGCTTTT AAATCAGTCA TATTGTTCAT TATTCTTTCT      6540

ATCGTATCGT TTCATTATAC CACAAACAAG GGGTGAAAAT CTATTGCAGA CTGTAAAAAA      6600

TCAAAGCCTG ACTGCTATCC AAATAGCTAT CAAACTTTGA TTTTTCTGTC TTATACTCTT      6660

CGAAAATCTC TTCAAACCAC GTCAGCTTCA CCTTGCCGTA GGTATAGGTA ACTGACTTCG      6720

TCAGTCTTAT CTACAACCTC AAAACTGTGT TTTTAGCAGC CTGCGGCTAG CTTCCTAGTT      6780

TGCACTTTGA TTTTCATTGA GTATTATCTT ATCTTAAGCC CATTTGAGCG AGCTTGGTTT      6840

GATATTTGTT TTGATCAACC AGCAGGCCCA AGCCCCCATA AACATCATAG GCATCTACCC      6900

AGTCACCCAG TTCTGGAATC GTCAATTTTT CAATACCATT TTTTGCTCCA TCCAAAACAG      6960

ATAAACCGTT TGTTAGGAGG AAAGTATAGG GTACGTTGGT TGAGGTCATA GCAAAAACCT      7020

TTCCAAGAGC TTCAGAACCA GTGAAAAGTT TAGTGGGATC TTTAATTTGC TCTAAAATTG      7080

CTGTTAAAAC TTGTTGCTGT CTTTTTGTAC GGCCGTAATC TGCCTCATCA TCATCACGGA      7140

AACGAGCATA ATTGAGCAGG GTCGAGCCAT TCATCTGCTG TTTTCCGACT TTAATGGTTT      7200

GGGTTGGAGA CTCAGTCTCG GTAGCGTATA AATCATCTCC GACTGTAGCT TCTGTTAGGG      7260

GACGCCCATT CAATGTTGAA AATTGAGCAT CAATCGTCAC CCCATCAGGG AAAAGCGTGT      7320

CAATCGCTGT GGCAAAGGCC TGGAAATCAA CCAAGGCGTA GTACTTAATG TCCAAGTCAA      7380

AATTATCTTT CAAGACTTGG CGAACCATTT CTGCCCCTTT TTGCCCCTCT TGTTCTCCTA      7440

ACTCGTAGGC TACGTTTAAC TTGTTATCTG TCTGTTTTCT ACCATTAATC ACTTGACTAT      7500

AACCATCTAT ATAGACCAAA TTATCACGCA TGAAACTGAC TAGCTTCATT TTCTTATCTG      7560

AGCCCCCGAC ATTTAATACC ATAATAGAGT CAGTTCGTGT CTCAACACTG TTCTGGCCGA      7620

TTCGACCATC AGTACCCATG ATTAAAATAT TAACTCCATC TCTAGTGTCC TGACCATTAA      7680

AGACTTCTAC TTGAGCTGCC CGGGCATCAG CAGTTTTCTT TGCGCTAGCA TCTTGGTAAC      7740

CACGCAAAAA CATGAATACC ATGGCCAAAG CCACACAGAC CAAAAGTGAA AAAATCACCA      7800

TAAAAATTCG TTTAAGACGG AGCTTCCGTC TTTTCTTTTT TGGAGGGAAA GAGAGTGCTT      7860
```

687

```
GTGATTTGGA TTGTGAGCGA CTCCGGTTCG CATAGCTTGG TAAGTCAACC TGCTCTTCTC      7920

TTTCTTGTTC CAAGCTAGAG CTACTATTTC CCCTAGCAAG AGTTAGCTTT TCTTGCAAAT      7980

AGGCAAACTC ATTTTTTTCT CTCTCATTGA GATAGTGAAT ATTTTTTAGC AAATAATCAT      8040

AACGCAACTG CTCATGATGA CTTAAGGGAT TTTCTTTACT CATCTTCTCT CCTTTCCATG      8100

GTCTGATATT GGATAAATAG GATAGGCACC CAGAATTTTA TACTGGATTC CAATCGCTTC      8160

TAATTCTTTT TGGGCAAAGT GGACCAAGTC CTTATCGGTA TAATCCACAT CGATAATGAA      8220

AAAGTATTCA CCCAGTGCTG TCTTGAGTGG ACAACTTTCA ATTTTTGTCA AGTCAATTCC      8280

TCGCCAAGCA AAGGTCGACA GGGCCTTATA AAGTGCACCT GGAAGGTTGT CAGGTAATGT      8340

CAAGGCCAAA CTCATCTTTT CAGTTTGTGC TTGCAAGGGA ATACTAGGCT TTTCAGCTCC      8400

TAGAACCCAG AAACGTGTGA AATTGGCTTC CATTTCCTGA ATATCCTCGG CAATCAGTTC      8460

CAATCCATAT TCTTCAGCAG AACTTCTAGG TGCAACTGCT GCAAAGGGCT GGTCTGGATG      8520

TTCGGAAATA AAACGGGCCG CATAAGCTGT ACTAGCTGTT ACCTCGATTT GAGCCTCTGG      8580

ATATTGTTCA TCGATGAATT TCTTTCCTTG AGCCAAGGCC TGTGGATGTG AAAAAATCTT      8640

TTCAATCTTA GTATGGCCTG GAACCACCAT CAACTGCTGA TGAATAGGCT GAACGATTTC      8700

TGCTACTGCT TGGATGTGAG CCTGATGAAA AAGATAGTCC AAGGTTTCAT GAACACTACC      8760

CTCAATAGAA TTTTCAACTG GCACCACAGA ATAGTTCACT AATCCTTGCT CATAAGCCTT      8820

GATGACATCT GTAATGTTGG CAAAAGCCTG CAATTCCTCA TGAGGAAAAG CTGTCTGCAC      8880

AACGTGGTGT GAAAATGATC CCTTGGGACC TAGATAAGCA ATTTTCATCT TAGTTCCTCT      8940

ATAATTTCCT CTGGGCTTAG CTTGGTCACA TCCAAAACCC GACTAGCCAC TTCCTCATAC      9000

CAAGCCTGTC TTTCTTGGAA AATAGCTACT AGTTCTTCCT TGCTATTATT TAGAAAAAGC      9060

GGTCGCTGAT TGTCCTTATC AGCTGCGATA CGTTGGTAGA GGGTTTCAAA ATCTGCTCTC      9120

AGGTAGATGT TATCTGTATT AGTCTTGAGT AAGTCACGAT TTCTCTGAGA AATAACCACT      9180

CCTCCTCCAG TTGACACGAC TTGGTCTGTT TGTAGTAAAT CAGCTAGGAC TTCTGATTCT      9240

ACCTGACGAA AGGCTGTTTC TCCCTTTTCA GCGAAAAAAT TCGCAATGGA CATACCTAGG      9300

CGATTCTCAA TCAGAGCATC CATATCAAGG TAATTAGGGT CCAAGCCTCT TGCAATAGTC      9360

GATTTTCCAG CCCCCATAAA CCCTAATAAC ACCTTAGCCA TGAATCAAGC TCTCCAAATC      9420

ATCAAAGAAA CTAGGATAGC TGGTATTGAT GGCTTCTGCA CGGTCAAGCT CCACCTCTCC      9480

ATCTGCAACC AAGAGGGCTG CGATAGCTGT CATCATGCCG ATACGGTGGT CACCAAACGT      9540

ATTGACTCTA GCACCGTGAA GAGCTGATTT TCCTTTGATA ATCATCCCAT CTGCCGTAGG      9600
```

688

```
AGTAATATCT GCTCCCATAC TATTTAAGGC GTCTGCCACA ACCTGAATAC GGTCTGTTTC      9660

CTTGACCTTG AGCTCCTCAG CATCCTTGAT AACTGTTACA CCTTGGGCTT GGGTCGCAAG      9720

CAGGGCAATA ATGGGCAATT CATCAATCAA TCGTGGAATC AAAGCGCCAC CAATCTCTGT      9780

TCCTTTCAAG TCAGAAGACT CAACAATCAA GGTAGCAGAT TTAGCGACTG GATCGATTTC      9840

AGTTATTTCC AATTTTCCAC CCATGGCACG AATGACATCA ATAATACCGG TGCGAGTTTC      9900

GTTGATCCCC ACATTCTGCA GCACTAGACG AGAATTTGGA GCAATCAAAC CTGCGACTAA      9960

CCAAAAGGCT GCACTGGAAA TATCTCCTGG TACGACCACC TTCTGTCCTG TCAATTTTTG     10020

TGGCCCCTGG ACTGTGATTT TCTTACCATC CACACTTAAA TGACCACCAA ATTGTTTCAA     10080

CATATCTTCA GTATGATTAC GGGTGTACTC TTTTTCGATA ATAACTGACT CCCCCTTAGC     10140

TTGTAAGGCT GCAAACATCA AGGCTGACTT GACTTGGGCA GAGGCAATTG GCAACTCATA     10200

ATGAATAGGT CTTAGGTTTT TCGTCCCTTT TAAGCGAAGG GGAGGCAAGT CTCGTTCAGT     10260

TTGCCCTGAA ATGCTGACGC CCATTTTTTT CAGTGGAAGG GTCACACGGT CCATAGGACG     10320

TTTGGAAAGA CTATCATCTC CAAACATCTC TACTTCGAAA TCTGCACCAG CAAGGACACC     10380

TGAAATCAGG CGAATCGAGG TGCCAGAATT TCCCATATTA AGGGCATTTT GTGGCGCTTT     10440

TAAGCCAGCC ATGCCTACAC CTTGAATGGT AATAACCCCA TCTTTATCCT CAATTTCAAC     10500

ACCAAGGTCA CGAAAAACCT GCATGGTCGA AAGAACGTCT TCACCTCGCA GAATATCATA     10560

AACCTTGGTC TCACCCTCAG CCAAACTTCC AAAGATAATG GAACGGTGGC TGATAGACTT     10620

GTCACCTGGG ACGCGGATAC TACCATGTAA ATGGCGAATG TTTGTTTTTA GTTTCATACT     10680

GGACCTCATA CTTGCAATAC TTTTACCTAT TTTATCATAA AAAGCCAGAA ATTCCTTAAA     10740

AATTCCTGAC TTTAGGATCG TTCTTTTCTT ATTTCAGCAA TTCTGAAACT GGTTCAAAAA     10800

CAATTTTTTC AATATCAGAA AGGTAAATGG CCAATTGTTG TTGCTTGGTA AAGAATTCTG     10860

ACAAGAGGCT ATTTCCTTGA ATCTGTTTAC CAAAGCCTTC CATCTTAGCT TGGAAGGACG     10920

CATCTGGCAT TTGACCTGTC TGTGCTAGTT TTTGAATTTC CTCTTGAAAG GCAAGATAAT     10980

CTGTAAAGAT TTTGCTTGCC TCAGCATCTG CTGCAATCGC ATCTTTAGCT GCTTTAACAG     11040

CCTTGTATTC TGGTAATCCG CGTAGACCGC GACTGAGTTC GTTTGCACTA TCGTAAATAT     11100

TTGACATGTT CTTCTCCTTA TTTGATGACG ACTGTATAGT CAGTATTTTC TGTTATGAGA     11160

TGCTCAGCTC TTTCCAAGTC TTGAGCATTT TTAAATGAAA TTTGTAGGAT TCCGTGAATA     11220

TCCTCACGAT TTTCCTCGTT GATGTGGATA TTAACCAAGG AAGTTCCACG TAGCAGTTCC     11280

AAAATCCGCA GGATGACATC TTCTTCATCA GGAACGTCAA CATAGAGGTC GTAAGAGCTA     11340

TCCACACCAC CACGCTTATG GATTTCCATG GTCTGGCGTT GTTCACGCGC TTGGTTAAAA     11400
```

689

```
AAGTTCCAAA TTTGCTCTTC ATCTCCCTTA CTAATGGCCT GACCAATCGC TTCCAAACGT   11460

TCCTTGAAAT CCTCAATTCT ATCCAGAATG ATCTCGCTAT TGGACAAGAG AATGGAGGTC   11520

CACATTCCTG GCTCGCTTTC CGCAATTCGG GTCATATCTC GAAAACCACC TGCCGCAAAG   11580

CGCCTTGCCA TCTCATGCTC TTGAGCATAG ACCGCAGTCT GCTCCATGAG ACTAGAAGCC   11640

AAAATATGAG GAAAATGGCT AATCTGAGAA GTGACACGAT CATGCTCCTT GGCATCAATC   11700

TCGATAAAAC GAGCATGAAG ACCTGAAAGC AGATCCTTCA TTTCCTTAAG CGTGTCCTGA   11760

CTTGTCAGGC TTGAAGGTGT AAAGATATAA TAGGCATTTT CAAAAAGATT GACATCTGCC   11820

GAAGCAGCCC CTGTCTTGTG ACTACCAGCC ATGGGATGGG CCCCGACAAA GCGAACAGAC   11880

TTGCCAGCCA AATACTGCTC CGCCGCATCC ACAATGGTTG ACTTGGTCGA ACCAGCATCT   11940

GAAATAATAA CGCCTTCTCG CAAATCCAAA TTGGCCAACT CCTTAATGAA AGCAATAGTT   12000

TGTTTGATTG GCAAGCTGAG GATAATGACA TCTGCCAAAG GAGCAAAACT AGCAAAATCA   12060

TCCGTTGCAC GGTCAATCAT ACCTTCTTTC AAGGCGATAT CTCTCGAAGC TTGACTACGA   12120

TTATAACCTA AAATTTCATA ATCTGGATGA TCGCGTTTGA TACCAAGTGC CATAGAGGCT   12180

CCAATCAACC CAAGACCTGC GATATAGATT GTTTTTGCCA TAGGAACTCC TTAATAGTTC   12240

TTTGTATAGT CTCGGTGTTT GGCTACCGCT TCTTTTAGTT CCTCAAGATT ATCTGATGAG   12300

AATTTTTCGA GGATTTCTTG CGCCAGAACC GTTGCTACAA CTGCTTCCAT GACCATTCCT   12360

GCAGCTGGAA GAGCAGTCGG ATCACTTCTC TCCACGGTTG CCTTGTAAGG TTCGTGGGTT   12420

TCGATATCCA CACTCATAAG AGGTTTATAA AGAGTAGGAA TGGGTTTCAT GACCCCACGA   12480

ACAACGATGG GTTGCCCATT AGTCATACCA CCTTCAAAAC CACCTAGATT ATTGGTACGG   12540

CGAGTATAAC CGTCTTCTTT AGACCAGAGA ATTTCATCCA TAACTTGGCT GCCTTTACGA   12600

TAACCAGCCT CAAAGCCAAG ACCAAATTCC ACCCCTTTAA AGGCATTGAT AGAGACAACA   12660

GCTTGAGCCA ATCTTGCATC CAATTTTCTA TCCCATTGGA CATAGGAACC AAGACCAACT   12720

GGAACGCCTC CGACGACTGT CTCCACAACC CCACCGATGG TATCACCATC ACGTTTGATT   12780

TGGTCAATAT AGTCCTTGAT TTCCTGTTCT CGTTCTTGGT TGACAATAGA AACTTCAGAC   12840

TGGGCAGCTC TTTGCTTAAT TTCAGCGACT GTCAGATTTT CAGGAACATC GATTTCCTTG   12900

CCACCAAAGA CCACGACATG GTTGGCAATC TCCATATCCA GCTCAGCCAA GAGGCGTTTG   12960

GCTACTGCAC CAACTGCCAC CCGCATGGTG GTTTCACGAG CTGATGAACG CTCCAAAGAA   13020

TTTCGCAAAT CATCAAAACG GTACTTAATC CCCCCAACCA AATCGGCATG ACCTGGGCGA   13080

GGATGAGTAA TTTTCCGCTT GCTTTTAAGG CGGTCTTCAA TGTCCTCCGC AGACATGATG   13140
```

690

```
TCCAGCCATT TCTGGTGGTC CTTATTGATG ACATCCATAG TAATAGGCGC CCCTGTCGTC    13200

TTCCCGTGGC GAACGCCCGA AGTAAAGACA ACCTGGTCAT TCTCAATCTT CATACGACCA    13260

CCACGACCGT AGCCACCCTG ACGGCGTCTA AGGTCCTCAT TGATATCCTC AGCTGTCAAT    13320

GGAAGTCCAG CTGGAATTCC CTCAATAATA GCTGTTAGAC GGGGGCCGTG TGATTCTCCT    13380

GCAGTTAAAT ATCTCATACA CTCTCCTTAT TTTACCAAGT AGTCTTTCAT CTCTTCCAGA    13440

GAAACTGGGT GAATGGTCGC TGAACCAAGC TCTGGCACCA AGACCAATTT CAAGGTGTTA    13500

CCACGCGCTT TCTTGTCATG AGTAAGAGCC TGATAAAGCT TGCCAACTTC CCAATTTTCA    13560

TAGTCAACAG GCAAACCGAA TTTCTGACAC ATCTCTGTGA TAGATTGGGT AATGCCAGCT    13620

GGCATGAGGC CTTTTTCCTC AGCAACCTTG GAAATCTGTA CCATTCCCAT GGCAACAGCC    13680

TCTCCATGCA TGACCTTGCC ATAACCGGCA GTCGCTTCGA TGGCATGGCC AATAGTGTGG    13740

CCAAAATTGA GGTAAAGACG AATACCATTG TCCAACTCAT CTTCAACCAC CATCTTGCGC    13800

TTCACCTGAC AAGAATGTTC AATCAAGGTC TCTGCATGTT CCAAAATACT CTCAACAGAA    13860

CCATTCAGTC CCGTCAAGAG AGCCCACAGT TCTGGATCCT CAATCAAGCC ATACTTGATA    13920

ACTTCACCCA TCCCTTCAAT CAACTCTCTT TTTCCGAGGG TTTCAAGAAC AAGTGGATCA    13980

ATCAGAACCC CATCTGGTTG GGCAAAGGTC CCCACCATAT TTTTAGCAAA TGGTGTATTA    14040

ACGCCTGTCT TTCCACCGAT AGAAGAATCA ACCTGAGCTG TCAAACTAGT CGGAATCTGA    14100

ACAAAGTGAA TACCCCGCAT ATAGGTAGAG GCTACAAATC CAGCCAGGTC CCCAACAACG    14160

CCACCACCAA GAGCAACGAT TCCATCGCTA CGAGTCAGAC CTTGCTTGAC TAGAAATTCA    14220

TAGACTTTCT GAACAGTAGT TAAATTCTTT CTTTCTTCAC CTTCTAAGAA ATCAAAAACA    14280

GCTACCTGAA AACCAGCATC TTCTAGGCTG AGCTTGACCT TCTCTGCATA GAGAGAGGCT    14340

ACATGGTTAT CTGTCACAAT GACTACCTTT TGCGGTTGCC AGAGTTCTCG CAACCACTGA    14400

CCAGCCTGGG CCATACAACC TTTTTCAATC TGAATATCAT AAGGATGGTG AGGAATATCG    14460

ATTCTGATTT TCATAGGAGA GTCTCCCTTT CTTTATTGGT ATTTTTCTGT TAAAGACTGC    14520

CAAATCTCTT CTGTCGGCAT TTCCTTGCCT GTCCACAGTT GAAAAGCTTC TGCAGCTTGA    14580

TAGAGTAACA TTCCCAGACC ATTGACTGCT GGATTGCCCT GACTTCTAGC CCATTTCAAA    14640

AACGGTGTTT CAAAGGGTTG GTATATGATA TCTGCAACTA AAAGAGTTTC TGGTAAGACT    14700

ATGTTTTCAG GAACAGGAGA GGATTGGCCA TCCATGCCCA CACTGGTGGC ATTAACTAGC    14760

AAATCCGACT CGGCAATCCT TGCTTGCAGT TCAGAAACAT ATTCTAAAGC ACACAAATCC    14820

ACTTTAAAAC CTGTCTGCTC CTGTAACTTG TCTAGGTAAG GTCTTGTTTT TTCCATAGAA    14880

ACGGAACGAA CAAAGACCGA AATCTGACTG ACGCCATCCA AAATAGCCTG TGCCAAGATT    14940
```

691

```
GATTTAGCCG CACCACCTGC ACCCAGCAGG GTCATCTTTT TACCTGAAAT TGTAAAAGAA    15000

GGCAAGCACT TAAAAAATCC CTTGCCATCT GTATTATATC CAATTAAATT GCCATTCTCA    15060

TTGACAACCG TATTAACCGC ACCAATCAAG CGCGCTTCAT CGCTCAGCTT ATCCAAATAA    15120

GGAATCACCT GCTCCTTATA GGGCATGGAC AGATTGATGC CAAACATCTG GTAGCGACGA    15180

ATATTGGCCA CTGTTTCTAC CAAGTCACTC GCTTCAATCT CCCAAGCCAC ATAAGCACCG    15240

TTGGTAGCTG TCGCCTCAAA GGCTCTATTG TGGATGAAGG GAGAAATAGA ATGCTTAATA    15300

GGATTGGCAA CAACTGCAGC TAAACGTGTA TAGCCATCAA GCTTCATCCA AAATCTCCCT    15360

GATTTTTTTC ATGCTAGCTA GAGAAATCTG CCCAGGGGCA CTAACCTCAT CCAGACTGGC    15420

AAAAGACCAA CTCGAACCAG TCACATCCGC AGTGATACGA GAGACCTTGC CCACCTTACC    15480

CATAGAAATG GTCACATATT CCTGTTCAGG ATTGAGGGTT TTAAAGCCTC GTGTATAGTT    15540

CATCAAGTCT AAGACATCCT GCTCCGTGTG AGCCATCACC GCAACCTTAA CAAGTTTTGG    15600

ATTTAGGATC GTCAACTCTG ACAAGATTTC CATCATGTTC TCAGGTGTTT CTTGGAAATT    15660

ATGGTAACTC AAAACAAGAT TTGGGAAGTC CAGCATTTCC TCAAAAACAT CCTTGTAGCT    15720

ATAGTACTCA AAATCAATAT AGTCTGGTTG ATAGAGTTGC GCAACTTCCT TGATTAGATG    15780

GATATACTCT TCTGGAGAAA GGTCGATTTC TCCACCTTCG GAGCGAGTTC GTAGCGTGAA    15840

AACCAACTCA CGGCCTGCGA ATTTTTCAAA AATGGCTGGA GCTACCTGCA AAATCGCTTC    15900

TTTAGGCAGA TAGTCGGCAC GCCATTCAAT GATGTCGGCA TCCAGGTACC TCGTGGCATC    15960

CAGAGCCTGA GCCTCCTCTA AACTTCTTGG CATTACTGAA ACGATTAATT TCATTTACTA    16020

ACCTTCATAC TAATCACCTT GAGGTAATTA CTACTTTCAT CTTTTTTATT ATAGGCAAAA    16080

TCTGCTGGAA GACCATATTT GTTTAAAATC TGGTAACTTC TTCCTGCAAA ACCTTTATCA    16140

ATTTGTTCTG TAAATTTCTG ACGGGAAACA TTGGCAGCAT TGGTACTGGC AATGATAATC    16200

CCTCCCGGAT TTAAAATCTC AAGACTCTGG GAAATCAACT TGTGATAATC CTTGGCCACA    16260

GAGAAAGTTT GTTTTTTATT CCGAGCAAAG CTAGGCGGAT CTAGGACAAT CACATCGTAG    16320

GTCAAGTCTT TGCGTTTGGC ATATTTGAAA TACTCAAAGA CATCCATGAC TATAAAACGA    16380

TGCTCGTCTG TGCTGAGCCC ATTTGCCTGA AAATGCGCTT GAGACAATTC TCGTGAACGT    16440

TTGGCTAGAT CAACAGAAGT TGTATGGCTA GCTCCTCCCA TGGCCGCAGC TACTGAAAAA    16500

GCCGCTGTGT AGGAAAACAT ATTGAGTAAG GATTTACCCA TAGCCAAGCC GTCAACTAAA    16560

CTACCGCGAA CCTCATGCTG GTCTAGGAAA ATTCCTGTCA TCAAGCCATC ATTCATAAAG    16620

ACTTGATACA GGACACCATT TTCTAAAACA TTGAAAAAGT CAGGTGCTTC TTGACCATAA    16680
```

692

```
ACATGGGCAG ATTCATAGTC CAAACCCTTA AAGCGGATTT TCTCATAAGC TCCTAAAACC      16740

TCAGGGAAAA CCTGTCTAAA GGCTTCTGAT ATAGTCTGAC GAATCTGATA AACATAAGAG      16800

TTATACCAAG AAAAGACGGC GTAGTCGCCA TAAAGGTCCA CTGTCAGACC CCCAAAGCCA      16860

TCTCCCTCTT GATTAAAGAG ACGAAAGGCA GTTGTCAAAT CATCTTGATA GTAGGCGTTT      16920

CTCTTTTCTT TGGCTTTTCT AAACAACGTT TCAAAGAAAG CTTGATTGAA GGCCACCTTG      16980

TCTTTGCTGA TAAACCAGCC CAAGCCCTTG TTTTGCTGAG AAAGGTAGGC AGTCCCAAGA      17040

AAGTTTCCTT CCTGACCCTG CACCTCTACT TCCTGATCCT TAAGATTGAC ATTCTCAAGA      17100

TCACTGGCTT CTAGTAAAAC TAGCCCCTTA GCAAGCTTCT TTTCAACCCT TTTGCTGACT      17160

CTTATTCTAT TCATAACTAC CATTATATCA AACTTTTAGA CAATTCTCAA AAAAGAAACT      17220

ACCCTTGCTT TTTTACTCTT CTTTTAAAAA ATGGTATACT AGACTTCCTG CAAAACTAGG      17280

AAGTAAATGT GTAAGAATCA CAGTAAAAAA TGCTCTTCCG TCTTGGAGGA GCATTTCTTT      17340

TTATCAACGA AAATCAAATA GCAAACTATG AAACTAGCCT CAGGTTAACT GTGAGATTAT      17400

AGGTAGAGAG GTTGTATCAG CAATATGTGT CTGTCAAATT TAGTGACAAA GGTAGTAGAA      17460

GAAAGATAAA GAAATAAATC AGCTTCAGTA GGTATCTGGA AAATTTGATT TTATAGAGAA      17520

GCCTTTTGTT ACAAACTCAA TATACTATCA ATAAATAATA TTATAGAAGC AACAATAATT      17580

ATAATTTCAC CTATCTGCAT CATTCTATTT CGAACTCTAA ATATATGTTC TATCAAAAAT      17640

ACTTGGAACA CACACATTAT AGGAATTAAC GTTTTTGAAA TTGAAAAATA TCCAAATAAA      17700

TAAACTATAA ACAACAAAAA TAGAACTATG TTATATTTCT TATTCAAAAC ATTCCTCCCT      17760

ATATATTTTT GATTACCAAT CTTAATCATT TACAACTACA TTCTAACAAA CTATAAAAGC      17820

GTTTGTCGAA TTGAATTTAT CAAGCAAGCG ACCAACCAGT TCATCTTTTT TCTATTTCTG      17880

CCAATATGCG TGACAGGTAA TAATGATAGC CAAAAATAGC AAGAGCAAGC AAGACGATAA      17940

GAGCTCCTAC TCCCAAGCTG ATGGCAAGGA TAGGGGAGAG AGACTGAACC AAGAATATGC      18000

TCCCAATTAC AAGGGCCATC AGGATTGCAC TATAAATAAA CAATAAAACT ATGGCGACTA      18060

TGCCATTTGA ACGATTCACC AGGTCCGTAA TGCTACTCCA ATTGGTTGAC AGATTTTTAA      18120

CGTCCTTAAA GTAATGGTGG CAAGAAAGGA TGACACTGGC AATGATCCAG ACTACAAGAA      18180

GGTAAATCAT CGAAATGATG GGCAAGCCTA GATATAGAGA AAGACCAAGC AAAGTCAGAA      18240

CTGGTAAAAA GGACTGGACA GCATATATAA TCCAAAATTT CACTTTCACA TAACGAGCAA      18300

AGTCAAAGGG TAAACTCTTA AGAAAATCAA CATTTTCCCT CTCCAAGGAC AAGGCAATTG      18360

AATGCAGGCT GGTGATATTG TTATTGACAA CTGCTATAAA GAGAGCTATA AAAAACAAGG      18420

GTAACCAGTA TGGAGGATGA ATGTCTGGAA CTATCTGAGA ATCTCGGATT TTGGAAATCA      18480
```

693

```
GACCGATCAT CATGAGATAA GGAAGGAAAG CACTTGTAAA AAGCACTGTA ATCACGCCAG      18540

TCCCCTGTCC CAAGAGGGTG AGGTGGTAGC GTAAAACCAT GCGAAAAAAT CCCTTTTTAG      18600

TGGTTGAAAT TCTCTCCTTG CTGCGACGTT CTTTTTTGAC CTTCTCCTCA CTATTAAGCA      18660

GGATCACGTC ATAAAAACGA GGAAGGACCT TCTTTTTGGT CAGATAAAGC AGGAAGAGAG      18720

TTAGTCCTAT CCAAGCGAGC AGACCCACTA AGGCTTCTGT CGAAAAAGGC TCCACTGCTA      18780

TTTTGTAAAA GATATGAAGA GGATAAAGGA GAAATGGAAT GTCTCTAACT TTGTCAACAA      18840

TACTTCCAAA AGTCGACTGA AGAAAGAAGA TAAATATTAA AGGTATGAGA ACTCCTATCC      18900

CAATCATCAC ATTCGAAAAA ATAGACTGAT ACTTTCTGAA GACCCTAGTT TGAGCCAAGA      18960

AATGCACTGC CACTACCATC ACTAGAGCCA CAGAGACAAA TAATAAGGTC AAGGACAGTA      19020

GCATCAAAGG CAAACCCAGC CATAGAGAAG GAGCTAGCCT AATGTAGAGG ACCAGAAAAT      19080

AAGCTAGGAT TGGTACAATT CCAGTTAGAG CTGGCAAAAG GACAGACAGT CCTTTAGCAA      19140

TTATAATCTC TGATTCTTTA AAGGCATAGG GCCTATACGA TACCAAATCC TTACTCTCAT      19200

AAAAGACATT GTAAAAGGCC GTTAAAGAAG TTGAAAAGGC AATCACTAGT AAAATAGCAA      19260

TCATCGAGCT AAAATAAATA GGTATTTCCT CAAAAGGAAA ATGAATGGCT ATATTACTAA      19320

AACAGATGAT CATCAAGAGA CTGGAAAAAA TGTAAGAACT TAAGACTCTA GCGGAAACAT      19380

TTACTTTTTT                                                           19390
```

(2) INFORMATION FOR SEQ ID NO: 87:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 18436 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

```
CCGAGCGTCG TTACAGACTT TATCAAGATT GGACGCAAGA AGAAATTCAA CATATAAAGG        60

AAAATATGGC ACAATCTCCA TGGCATACTC ATTACCATGT TGAGCCAAAA ACAGGACTTC       120

TCAACGACCC AAATGGCTTT TCTTACTTTG ATGGCAAGTG GATCCTCTTT TACCAGAATT       180

TTCCTTTTGG TGCAGCCCAC GGTTTAAAAT CTTGGGCACA GCTAGAAAGT GATGATTTGA       240

TTCACTTTAA AGAAACTGGA ATCAAAGTTT TACCAGATAC TCCATTAGAT AGCCACGGTG       300

CCTACTCTGG TTCTGCCATG CAATTTGGCG ATAACTTATT CCTATTTTAT ACAGGAAATG       360

TTCGCGATAA AAACTGGATC CGTCACCCAT ACCAGATCGG TGCTTTGATG GACAAGGAGG       420
```

694

```
GTAAGATTAC AAAGATTGAC AAGATCTTGA TTGACCAGCC AGCAGACTCT ACTGACCACT        480

TCCGCGATCC ACAAATTTTT AACTTTCAGG GTCAATATTA TGCCATTGTC GGCGGACAAG        540

ACTTGGAGAA AAAAGGTTTC GTTCGTCTCT ACAAGGCTGT CAATAACGAC TACACAAACT        600

GGCAAGCAGT TGGCGACCTT GACTTTGCTA ACGACCGTAC TGCCTACATG ATGGAATGTC        660

CTAATTTGGT CTTTGTAGAG GAACAACCTG TCCTTCTCTA CTGTCCACAA GGATTGGATA        720

AGAAAGTTCT AGACTACGAT AATATCTTTC CAAATATGTA TAAGATCGGG GCTTCCTTTG        780

ACCCTAAAAA TGCCAAAATG GTAGATGTGT CTCAACTTCA AAACATGGAT TACGGTTTCG        840

AAGCCTATGC AACTCAAGCC TTCAACGCTC CTGATGGGCG TGCTCTAGCA GTTAGCTGGC        900

TTGGTTTGCC AGATGTTTCT TACCCATCTG ACCGTTTTGA CCACCAAGGA ACCTTCTCTT        960

TGGTCAAGGA ACTCACTATC AAAGACGACA AGCTCTACCA GTATCCAGTC GCTGCTATTA       1020

AGGACCTTCG TGCTTCTGAA GAAGCCTTCT CAAACCGTTC CCAAACCAAG AACACTTACG       1080

AACTTGAACT CAACTTGGAA GCTAATAGCC AGAGCGAGAT TGTCTTACTT GCTGATAAAG       1140

AAGGTAAGGG ACTTTCAATC AACTTTGACC TTGTAAACGG TCAAGTAACA GTGGATCGTA       1200

GCCAGGCTGG AGAACAGTAT GCCCAAGAAT TTGGGACAAC TCGTTCTTGC CCTATCGAGA       1260

ATCAGGCTAC TACTGCTACA ATCTTCATCG ATAACTCTGT CTTTGAAATT TTCATCAATA       1320

AAGGAGAAAA AGTATTTTCT GGTCGTGTCT TCCCACATGC GGACCAAAAT GGTATCCTGA       1380

TTAAATCTGG AAACCCAACT GGAACTTACT ATGAATTAGA TTATGGTCGC AAAACTAACT       1440

GATGTCGCCA AACTTGCAGG CGTCAGTCCT ACTACCGTTT CTCGGGTTAT CAATAAAAAA       1500

GGGTATCTAT CTGAGAAAAC CATCCAAAAA GTCAATGAAG CCATGCGAGA ATTGGGCTAT       1560

AAACCCAACA ACCTGGCTCG TAGTCTGCAA GGAAAATCAG CTAAGTTAAT CGGCTTGATT       1620

TTCCCCAATA TTTCCAATGT TTTCTATGCA GAATTGATTG ATAAATTGGA ACACCAACTC       1680

TTCAAAAATG GTTACAAGAC CATCATCTGC AACAGTGAAC ATGATTCTGA GAAGGAACGC       1740

GAATACATCG AAATGTTGGA AGCCAATCAG GTGGACGGCA TCATTTCTGG TAGTCACAAC       1800

CTAGGAATCG AAGACTACAA TCGTGTGACA GCGCCGATTA TTTCCTTTGA CCGAAACCTA       1860

TCGCCAGACA TCCCTGTCGT CTCCTCTGAC AACTATGCTG GTGGGGTTCT TGCTGCCCAA       1920

ACCTTGGTCA AGACAGGTGC CCAGTCTATC ATCATGATTA CAGGGAATGA CAATTCTAAT       1980

TCGCCAACCG GACTGCGCCA CGCTGGTTTT GCATCCGTAC TCCCAAAAGC TCCTATTATC       2040

AATGTTTCCA GTGACTTTTC TCCCGTCAGA AAAGAAATGG AAATCAAGAA TATCTTGACC       2100

CGGGAAAAAC CAGATGCCAT TTTTGCTTCG GATGATTTGA CAGCTATTCT GGTCATTAAA       2160

ATCGCTCAAG AATTGGGCAT TTCTGTCCCA AAAGAGCTCA AGGTCATCGG CTATGATGGG       2220
```

695

```
ACCTACTTTA TCGAAAATTA CTACCCTCAA TTGGCTACTA TCAAGCAACC TTTGGAAGAG     2280

ATTGCTTGTC TCACTATTGA TCTTCTCTTG CAAAAGATTG AAGGCAAGGA AGTCGCCACA     2340

ACTGGTTACT TCTTACCAGT TACGCTATTA CCAGGAAAAA GTATTTAAAC ACAAGAAAAC     2400

TCAGACCGAT TCGTCTGAGT TTTTATGATC TTAAATTTTC GAGATAGCGC TGGGCTGTCT     2460

CTAGGTTAAA GGTTTTATCT GAGATGAGGC GCTCTACTAG GGGAGCAACT TCAGATTCAC     2520

TAGCCCCAGC TAGGAGAGCT AGGGATTTGG CCTGTAGTTT CATGTGGCCT TGCTGGATGC     2580

CCGTACTTAC CAAGGCTTTG AGGGCTGCAA AATTTTGAGC AAGACCGATG GACACGATAA     2640

TCTGGGCTAA TTCTCTGGCA GAAGGATTTC CTAGTAGATC ATGACTGAGA ACTACACGTG     2700

GGTTGAGGCC GATAGAGCCA CCCTTAGTCG CTACAGGCAT GGGCAGGGTC ATCTCACCGA     2760

CCAATTCTTC TCTTTCAAGG TCCAGCGTCC AGCAGCTAAG ACCTTGATAG CGTCCATCTC     2820

GACTGGCAAA GGCATGGGCC CCAGCTTCGA TGGCACGCCA GTCATTACCA GTGGCAATCA     2880

AAATCGCATC AATACCATTA AAAATTCCTT TATTATGAGT AGCAGCTCGG TAAGGATCAG     2940

CCTGCGCAAA CTGACTAGCC AACGCAATTT TCTCCGCAAT CTCTCGTCCT TGATCCTTTT     3000

GGCGGCTCAA GTAGCGAAAG GCGATGCGAC AGCTTGCAGT CACCAGAGAA TCGGTCGCGT     3060

AGTTGGACAG GATTCCCATG AGACTCTGTC CCTGACTGAG TTCTTCTAAG ACTGGTTTCA     3120

AGGCTTCCAG CATGGTGTTG AGCATATTGG CACCCATGGC TTCCTGGGTA TCGACATGAA     3180

TATAAACAAC GAGAAAGTCT GGTTCGCCTT TTATCTGCTC GACATGCAGA TCACGCGCCC     3240

CACCTCCACG TTTAACGATA GAAGGATAGG CTTGATTGGC AAGCTCCAAG AGCTCCGCTT     3300

TCTTGCTGGC AATCTTCTCT TGCGCTAGTT TAGGATTAGC AACTTGATAA AGGGCTACCT     3360

GCCCAATCAT CTGTCGCTGA TGGACTTGTG CAGTAAAACC ACCTGCACGC TTGATGATTT     3420

TGCTGGCATA GCTGGCCGCC GCAACCACAG AGGGTTCTTC TGTCACATAG GGAACGGTGT     3480

ATTCCTGACC GTTGACAAGT ACCTCCGGAA CCAGTGAATA AGGCAGAGAA AAAGTTCCCA     3540

CTACATTCTC ACTCAGCTGG TCTGCCACAG TCACGCTCAT CTGTTCATCC TTCTCCAGAC     3600

TAGCTTGTCT CTCAGGACTA AGGAGCGCCT GAGCTTTTAA CAGCTCGAGG CGCTCTTGGT     3660

ATGATTTTTT AGAAAATCCA TTCCAACTTA TCTTCATTAT TTTTCAACCT TGCTATAACG     3720

GCGTTGGTGG TCGAGAATTT CAACCAAGGC AAAATCTTGA TTTTCATAGC CAGCAAACTG     3780

GGCAGAGTTA GTTTCATCCA AGTTTACTTC CTCAAAAAAG ACCTTTTCAT AGTCTGCAAC     3840

GGATAGGGCA GTTCGTTGGT TGAGCTTGTT CAAACGGTCT TTATCCAAAT AAGCTTCATA     3900

TCCTTCAACC AATTCACCAC TGAAGAACTC AGCCACAGCT CCACTTCCGT AACTATAAAG     3960
```

696

```
GGCGATTTTA TCCCCAGCTT TCAAGCTATC TGTATTTTCC AAGAGAGACA AAAGTCCAAG      4020

GAAAAGTGAA CCTGTGTAGA TATTCCCCAC CTTTTGACTG TAGAGAATAG ACTGGTCAAA      4080

ATGCTTTTGT AAGAGGTCTT TTTTCTCTTG AGGCAGGCTC TTATCCATGA TTTTTTTCAA      4140

GCCTTTTAGC GCTAATTTAG GATAAGGCAA GTGGAAACAA ACAGCCGCAA AATCATCCAA      4200

AGTAAGCTGG TAGCGTTTTT GATATTCAAG CCAAGTCGTT TTCAAACTAT CCAAGTATTG      4260

TTGGGTAGAA TAGACACCAT TTACATAAGG AGTTGTCGAG TAATTTGGTC GCCAGAAATC      4320

CATGATGTCA CGGGTCTGAG CTACATTGTC ATTATTAAAG GCCATCATGC GTGGATTTTG      4380

TGTAATCAAC ATAGCTACAC TTCCAGCACC TTGAGTTGGT TCTCCTGGAG TTTCAATACC      4440

GTATTTGGCA ATATCACTGG CAATGACCAA GACCTTGGAC TCCGGAGAAT TTTCCACATG      4500

CAATTTGGCA TAATGGAGGG CAGCAGTCGC TCCGTAGCAG GCTTCTTTAA TCTCGAAACT      4560

ACGAGCAAAG GGCTGGATGC CCAGCAAGCC ATGCACAAAG ACGGCCGCAG CCTTACTCTG      4620

GTCAATTCCT GACTCGGTCG CCACAATGAC CATGTCAACT TCTTGTCTTT CTTGCTCAGT      4680

TAAAATAGAG TCACTAGCAC TGGCCGCCAA GGTCACGATA TCCTCAGTTA GGGGCGCAAT      4740

ACTCAATTCC TTGAGTAAGA GTCCTTTACT TAATTTTTCA GGGTCAATTC CCCTCGCTTC      4800

TGCTAAGTCT TGTAATTTCA AGACATATTG ACTGGTCGCA AAACCAATCT TATCAATACC      4860

GATTGTCATA TTTACCTCTG TTTTATCATT CATGTAAAAA ATCGTTCTAT ACTATTTTAT      4920

CACAAATGGC AGTAAAAGAG AGAAAAAAGA CTTGATTCAC CAAATCAAGC CTCTTATTGG      4980

TCATCATTTT AAAGAATGAT TAGTTGCTAG AGAGTTCACC GATATAAGTA GCTTTATAAG      5040

CTCCATTCAC AGTTATCAGC TCCTGGAGGA TCAAATTTCC TGAGTAAGTC CTTCCCATCT      5100

CATCTACAAA TTTTTGATAA AACTGACTGG TCGGAATTTC TCTGACATCC TTATCAAATG      5160

TCTTATCAAG TGTTTTACTA ACCTTCTCAG CAATCAATTG ATGCTCTTGC CATCCACTTT      5220

GAAACTCTGA GCCCGAACTA GAAACCATGA CTGGGATAAA CAACAAGGTC AGTAGATTTA      5280

CAGACAATAA GGAAAGTAGT AGACTTCCTG CAAAACTAGA ATCCTAGTTC ATGATTGATA      5340

ATACCAGCAA TCAAATTCAT TCGTAATCCG AAGCGTTTAC GATGATTTCG ATAGGTTGTT      5400

GAAAACATTT TAAACGTTTT TACTTTGGCA AAGATGTTCT CAACCTTGCT TCTCTCCTTA      5460

GATAGCGCAT GGTTACAGGC TTTATCTTCA GCTGTTAGCG GCTTGAGTTT GCTGGATTTA      5520

CGTGGAGTTT GTGCTTGAGG ATATATCTTC ATGAGCCCTT GATAATCACT GTCAGCCAAG      5580

ATTTTACCAG CTTGTCCGAT ATTTCTGCAA CTCATTTTGA ACAACTTCAT ATCATGACTA      5640

TAGTTCACAG CGATATCCAA AGAAACAATT CTCCCTTGAC TTGTGACAAT CGCTTGAGCC      5700

TTCATAGCGT GAAATTTCTT TTTACCAGAA TCATTCGCTA ATTGTTTTTT AGGGCGATTG      5760
```

697

```
ATTTTTACTT CCGTCACATC AATCATTATC GTGTCCTCAA AGCTGAGAGG AGTTCTTGAA     5820

ATCGTAACAC CACTTTGAAC AAGAGTTACT TCAACCCATT GGCTCCGACG GATTAAGTTG     5880

CTTTCGTGGA TACCAAAATC AGCCGCAATT TCTTCATAAG TGCGGTATTC TCGCACATAT     5940

AGAAAGCGTT ATCAATTTAT TTATCTCATT TTTCAGAAAA TTCTTTTATT TCTGTAAAGT     6000

CTACGATACT CGATGTGTTT TTATATAATG ATAGAGTCTG AGAATCACTG TTCCGCTAGC     6060

CATTCCAATA GAGATTACCA AAGCCAACAT GACAACCAAG GTCGCACTTG CCAGTGCTTT     6120

ATTATAGTCC CCTGTCACAA AAAAGGCAGT TGTTCGGTAG GAGAGATAAC CTGGAACCAG     6180

CGGTGCCAAA ATGGCCAAGA TAAAGACCAC AGCAGGTGTC TTATAAAGAA TACTTAAAAT     6240

CTGGCTGACA CAAGAACCAA TAATGGCTGC AATGAAGGTA GCTACAATGA CATTGGTCGG     6300

TTCCTTGAGC AAGAGATAGA TTAGCCAGAC AGTCATGCCC AAAATCCCTC CAGGTAAGAG     6360

CATAGACCGT TGCACATTGA GTACGATTAA AAAAGTGATA ATGGCAAGAA AACTTGCTAC     6420

TGCTTGTAAT AAAAAGGTTG TTAGTGTCAT ATTAGTTCAT CAATACCAAG GCGACAGAAG     6480

TTCCTGCCCC TAAAGCGAGG GTAATGAGCA GGGATTCAAA CATCTTACTC ATACCAGAGT     6540

TTATGTGGTT GGTCATAATA TCACGGACCG CATTGGTCAA GGCAATACCT GGTACAAACG     6600

GCATGACCGC ACCAGCTATA ATCAAATCTG CCGTTGAAGG AAAACCTGTG TAGCGAGCCC     6660

AAAACTGGGC AATTATCCCA AAGACAAAGG CTCCAGCAAA GGCTGTCACA AAGGGAATTC     6720

GGATAAATTT TTCCACATAG AGGGAAAAGG CAAAACCAAA TAAGGTCGCC ACTCCTGCCC     6780

CAAGTGCGTC GTAGATATTT CCGCTAAACA TAACTGAAAA GAAAGGAGCA CTAAAGGTCG     6840

CAGCCAGAGT TACCTGCAAC TTAGTATAGG GAAGGGGTTT GGCTTGCAAG GCCGTCAATT     6900

GCTTAAAGGC TGTTTCTAAG TCAATCTGCC CCCCAACTAG CTGACGAGAA ATCTGGTTCA     6960

CATCGCAGAC TTTTTCGATG TTATAAGAAG AGGAGGTCAC GCGCTTCATG CGCAAATATT     7020

GGTATTTTCA ATAGAGAAAA AGATAGCGGC AGGCATGGCA AGGACATTGC AATCCACAAT     7080

CCCCTGCGAA TGCGCGATTC GAATCATGGT ATCTTCTACA CGATGGATTT CTGAGCCACT     7140

TTTAAGGAGA ATAGTCCCCG CTAGCATAAT CACATCAATG ACGGCATTTA ATTCTTTTGA     7200

TTCTTCCATG CTTTCCTCCT TTTATCAACT CCCTCTATTC TATCACAAAT CCGGACTCAA     7260

AAAAAATCTT TGCCATGAAA TCATGACAAA GATTGATTAC TCATTTTGAT TATCCATCTG     7320

CTTTTAAGGA GTAGCTGAAG TTGTTTTAGG TTTGTAGATT GAAATCTTGA CTCTAGTCTT     7380

ATTGAGGTCT ACCTTTTCAC CTGCTCTAGG ACTTTGTTCA ACAACCATGC CTTCTGCACT     7440

ACCTGCAGGC GCTGTCGTCA CTTCTACAAC TTCTATATTA GCTTCCTTAA TCCCAACAAT     7500
```

698

```
TTGAATCAAA TTGTTCTTAG TAAACTCCAA GCTAGAACCA ATGTAACTCG GCATGGCAAC    7560

ACTTGTAACT TTTTTAGCTA CTGTCAAGAC AATTTGAGTA GGTTTACTCA CATCATAAGT    7620

CGTTCCGGCA CCTGGACTTT GTTTCATAAT CGTTCCTGGT TCGCTTTCGC TGGACTCTTC    7680

TTCCTCTATC TTAATCAAAT TCTCAGGAAC CTTCTTCTGC TTGAGTTCTG AGATTACTTC    7740

TGTAGAGTTC CGTCCAATAT AGTTCCCTAA TTGAATCGTC GTAGCTTTTT TAGCTACTGT    7800

CAAAACAATT TGAGTTGCCT TGCTCAAGTC ATAGGTCGTA CCTTCTGGTA GACTTTGCTT    7860

CAGGACCGTT CCAGCCTCAC TCTCATTCGA CTCTTCTTCC TCAATTTTAA TCAAATTATC    7920

TGGAACTTTT TTCTCTTTTA ATTCCGCAAT GACATCAGAG GATTTCCGAC CGACATAATT    7980

ACTAATTTGG AAAGATTGCT TGCCTGATGA GACAACCAAA TTGATTTTCG TTCCTTCTTT    8040

TCGACCAGTT CCAGCGCCAG GATCTGTACG GATAATCCGC CCTTCTTCCA CCTTTTCACT    8100

AGCCTCTGTC TTCTCCTCAC CAATCTCAAA ATTGGCTTTT TTGAGCGTTG CCTTGGCCTC    8160

TGCAACTGTC TGACCTGCCA CATCTGGAAT GGCAATGGTT GCAGGAGTTC TGGATAGTAT    8220

CCAAATAAGA GAAGCTGCCA CCAATACAAG GCTGGCCAAC AAAATCAGGT AACGCATCTT    8280

AAATCTATGT TTTTTCGGTG CTTGTGGTTG GTAAGTTTCC TCTGTCACAG CCTGGCTTGG    8340

GTTTTTGATT GATTTGTGTT CTGTTTGCGC TTGAACCTTA GGAATAGATG TCAAGGTACT    8400

CTGAGAAACC TTCGGCAAGG TCTTGGTATC TGCCTTGCTC GTTTCATCAA AGATTAACTT    8460

ACTTTCATTT CTACGATTGT AGGACAAGCT ACTAGACAAG TCCACATACA TCTCTGAAAC    8520

CGAGCGGTAG CGATTGGTCA ACTTTTTAGC AGTTGCCTTG ATAATAACAT TTTCTAAAGC    8580

CTGAGGTACA GATGGATTTT CTGCAATAAC GGACGGCAGG GGTTCTGGA AATGCTGGAG     8640

GGCAATGGTC ACCGCGCTAT CCCCGTCATA AGGGATATGG CCTGTCAGCA TCTCATAGAA    8700

AATAATCCCC ATGGCATAGA TATCACTCTG CACAGTCGCC TTCGAACCAC GCGCCTGCTC    8760

TGGTGACAAG TAATGAACTG AGCCCAACAT CGAGTTAGTC TGGGTCAGAC TTGTCTCTGC    8820

AAAGGCTACA GCAATCCCAA AGTCTGTGAC CTTGGCAGTC CCATCTGGTG TCAAGAGGAT    8880

ATTTTGAGGT TTCAAGTCCC TGTGAACAAT TCCTCGAGTA TGGGCCAAGC GCATAGCCAA    8940

GAGAATTTGT CCCATGATAC GGACTGCTTC TTCATTAGAA AGAGGATAAT GTTCCTTGAT    9000

ATAGCGTTTG AGGTCCAGTC CAGCCACATA CTCCATAGCT AGGTACTGTT GACCGTCTTC    9060

CTCGCCAATA TCTGTTATCC GAACGATATG AGGATGGTCT AGATCTGCCA TAGCTCTCGC    9120

TTCACGCTGA AAACGAGCTA CAGCTATCGG GTCCGTCTGG TAGTTGGTCC TCAGAACCTT    9180

CACTGCCACT TCTTCCCCAT CTAAGATTAA GTCTTTGGCT AGGTAGACAT CCGCCATACC    9240

TCCTCGACCA ATCTGTTTGA CAATCCGATA GCGTCCGGCA AAAATCTTGC CGATTTGGAT    9300
```

699

```
CATTCTGCAT CCTCCTCGTT CATAGAAACA AGGGCAACCG TAATGTTGTC TAAACCTCCT     9360

GCATTGTTAG CAAAACGAAC AAGTGTCTCC GTTTTATCTG CTAAAGGAAT ATCACTGGTT     9420

ACAATATCAC GAATCTCACT GCCTGAAATC ATGTTGGTCA AGCCGTCACT ATTGAGCAAG     9480

AGATAGTCAC CTGACTCAAG GATAACTGTC CCAAAATCAG GCTGAATTTC ATCTTTTTGC     9540

CCAATAGACT .GGGTGATAAT ATTTTTTTGC GGATGAGCTT CTGCCTCTTC TGGTGTCAAT     9600

TGACCAGCCT TGAGCAATTC ATTAACCAAG GAATGATCGC TCGTCAACTG ATGGTATTCT     9660

TCTCCACGAA TCAAGCCGAT ACGCGAATCA CCAATATGAG CATAGATAGC CTGATTATCA     9720

ATAATAGCAA GGACTTCCAA AGTAGTTCCC ATGCCTCTGT AAGCTTCATC CTGACCAAGC     9780

TGGTGAATCT TTTGATTTTC AATTTCTAGG TAATGGGCGA ACCATTCACG CACTTCATTG     9840

ACTGTATCGA TCTGGGTATC AACCCAAGCT ACACCCAGGT CTGTGACCGC CATTTCACTA     9900

GCGATATTCC CTGCGCGATG ACCTCCCATC CCATCAGCTA AAATAATCAT GGTACGTCCA     9960

GCTCTATTGA CATAGTGGTT GACATAGTCT TGGTTATTTG TTCGTTTCTG ACCAACATCT    10020

GTTAATAATG AAATTTCCAT GTGTCAGTTC CTTCCTAATC CGATATCTTG CGAAATTGAC    10080

TGATGAAGAA TCCATCACTT CCATACAATT CAGGTGTAAT GAGGATACAG CCGTCTTTCA    10140

TGATATCCTT ACATTCATGT TCTAGTTTTA CCTGCTCGAA CTCGGGATGA CTCTCTAAAA    10200

AGGCCTTAAC GACTTGAAAA TTCTCCTCTG AGACGATAGT GCAGGTGCTA TAAGTTATTA    10260

TACCACCTTT GCCTAGTATT TGACAAACAC TACCTAATAT TTCTAACTGA ATTTCCTGCA    10320

AGGACGCGAA ATCTGCCGTT TCTTTATTGT ATTTGATATC TGGTTTTCGG CGCAAAAGAC    10380

CGATTCCTGA ACAAGGAGCA TCCACCAAAA TCTTATCAAA GGAATCCTGG TCAAAAAACT    10440

CATGCACCTT TCTGGCATCC AATTTTTGAG TTTGAACCCG ATCTTCAACT CCCAGACGTT    10500

GGGCATTTTC TTGAATTAAA TCCAACTTGT GGTCGTACAA GTCCAGAGCA GTAACCTGAC    10560

CTGTCGTAAG ATAAGAGGCT ATATGGGCTG TTTTCCCACC TGGAGCCGCA CAGGCATCAA    10620

GCACTCGCTC ATCACCTTGT AAATCAAGCG TCGGAGCAAC CAGCTGACTG GACTCATCTT    10680

GGATGGTAAT GGCTCCATCC GCAAACAAAT TATGCCCTGC AAAATGCCCC TGCTCCTTAA    10740

CCAGACCAGT GGTTGCTAAA AGGGAATTAT TCGCCTCCAA CAAGGCTTGG ATTTCCTCTT    10800

TTCGACTTAG GTCTGTTACA CGAATACTGG CTTTGTTTCG CACTAACAGG CTTTCAAAGA    10860

TGGCTTTTGC TCTCTCCTCT CCGTATTCTT CCTTGAGTTT GGCAACTAGC CAAACTGGGA    10920

GAGAATAGGC AATGGAGTCA CGCTTGTTTT TTCGCTTGAT GCTAGCAATA TCTGGCCAGC    10980

CTTCACGCAA GATACGGCGA AGGACAGCGT TGACCAATTT TTCACTGCCT TTTTTACGGA    11040
```

```
                                           700
GTTTGGCCAA TTCCACTGCT TCATTAACCA CAGCATGATC TGGAATCTTG TCCAAATAGC     11100

GGAGTTGGTA GGCACTCATG AGAAGAAGGA CATAGAGCCA GCTGTCTAAC TGGTCTCTGT     11160

CTTCGATAAA GTGGGATAGG TACCATTCCA GAGTCAGTTT ACGGGCTACC GTTCCATAGA     11220

CCAGCTCGGT CACTAAGCCC TTGTCTGCTG CCAAAAGTTG ACTTCCCTTT AGATGCTTAT     11280

TTAAGGCGAT ATTTGAATAT GCTTGGTTCA CAAAAACATC CTCTAGCACT GCTAGAGCTA     11340

AACTTCTAGC CGTTTCTACT TTAGTCACCA AATCGTTCTC CTACAGTCAA TGTACGTCCA     11400

ACTCCGTTGA GGAAGGAAGC AATGTCCATC TTAGGCTTAC CAGCTGGCTG CACTTGTTTG     11460

AGGGATAGAG CCCCTTCAGC CGTTGCGACA ATCAATTCTT TCTTGCCGAT AGAGAGAATC     11520

TCACCTGGAT TTCCCTGACC TTCTACTGGT AGGGCTTCAT AAATCTTAAA GCGGTCGCCC     11580

TTAAGGAAAG TATGGGCAAC AGGCCAGGGG TTCATTCCAC GAATTTGGTT AAAGAGTTGA     11640

CGATTGGTTT TGTTCCAGTC CAGTTTTTCT TCCTCTGGCT TTATATTTGG AGAGAAGGTA     11700

ACCTGACTCG TATCCTGCGG TTCAGGTTTG ATATCACCAG CAATATAGGC AGGCAGAGTG     11760

TCCAAAAGCA AATCACGACC AACTAGCGCC AATTTTTCAA ACAAGGTGCC AACATTGTCC     11820

TCATCTGTGA TCGGAATGCT GCGACGAGAA ATCATATCTC CTGCATCCAT TTCCTTAACC     11880

ATTTCCATGA TGGTCACACC AGCTTCCTCA TCCCCTTGAA TCAAGGCATA ATGGATAGGC     11940

GCACCACCAC GGTGTCTAGG AAGGAGGGAG GCATGAACGT TGACAGCAAA GTCCATGCTA     12000

TCAAGGAGTT TGCTTGGGAG AAACTGCCCA AAAGCAGCAG TCACAATTCC ATCTGCTCCT     12060

AGCTTCATAA GATCTTCCAT CTCTGGACTT CCAGATAATT TTTCAGGTTG GTAGATAGAT     12120

AGTCCTGCTT CCTTGGCAGC CTGCTTGACT GGGGTTTCTT GGATAACTTT TTTACGACCA     12180

ACAGCACGGT CTGGCTGGGT CACAACGGCT AGAATTTCGT AACGGTCATC TGTCAAAAGT     12240

CCTTTTAAGA CTGTTGCTGA AAAGTCGGGG GTCCCCATAA AGATTAGTTT TGTCATATCT     12300

TCTCCTTCTT ATAAAAATTG CTGCGGCTCA TGGTCAATGC TGAGACGGAG CTCACTATTT     12360

TCCCGTTCTT GAGTCAAGGC TAAAACCTGG TTGAGGGTCG ACCCCAGCTC ATCTTCTAAA     12420

CGGTATTTAA TTAAAATCTG GTAATGATAG AGGTTGTGGG TACGGGCAAT CGGTTTTGGC     12480

GTTGGCCCCA GAATGGGACT GGTCTCTGAC AAGCCTGACC GCAAAATGTT CATGACTTCA     12540

TAGGCACGTT TGAAAACCTC TTCTTCTTTC TTGTGAGAAA GGGTAATACC AATCGTGAAA     12600

TAGTAAGGTG GATAGCCGAG TTGTCGTCTG ATTCCCATTT CATAGGCATA AAAGCCTTCG     12660

TAATCTTGAT CCTTGGCAAA TCGAATAGCA TAGTGCTGCG GATTGTAGGA CTGTATCAAG     12720

ACTTGACCTG CCTTTTCAGC CCGACCTGAT CGACCTGCCA CCTGAGTCAA GAGCTGGAAG     12780

GTTCTCTCAG AAGAACGGAA ATCAGGCAGA TTCAAGGCCG TATCCGCATT TAGAACTCCG     12840
```

701

```
ACTAGGGTAA CATTGGGAAA ATCCAAACCC TTTGCAATCA TCTGAGTACC AAGTAAAATA    12900

TCCGCTTCCC CTCGCCCAAA CTGGTCAAGC AAGGCTTGGT GACTGCCTTT CTTTCGAGTC    12960

GTATCCACAT CCATCCTCAG AATGCGAGCT TGGGGAAAGA GTTCTGCTAG CTCATCATAA    13020

GCCTTCTGAG TTCCCGTCCC ATAGTAACGA ATACTGCGGC TCTTACAGTT AGGACAGACC    13080

TGAGGAATAT CCTTCGAGAA ACCACAATAA TGGCAGTTCA TAGTCTTGGT ATCCATATGC    13140

AAGGTCAGAG AAATATCGCA GTTGGGACAA GTATCCACCG TCCCACACTC CCGACACATG    13200

ACAAAGCTAG AATAACCACG GCGATTGAGC ATGAGAACCA CCTGCTCTTT TTTAACCAGA    13260

CGGTCTTGGA TAGCCTCTAG CAAAGGAGGC GTAAAGTTTG ACGTCTCATT TTGTCCGATA    13320

TAGTCTCGAA AGTCAATCAC TTGAACCTCA GGGATTGTAG CCAAAGGATT GGCACGTTGG    13380

GTTAGACGTA AGTGTTGATA GACGCCTTTG CCAGCACGTG CCCGGCTCTC TAAGCTCGGC    13440

GTTGCAGATC CAAGTACCAG AGTTGCTTGA TTATACTGAG CCCGTAAAAT AGCTACCTCT    13500

CTGGCATGGT AACGGGGATT GCTGTCCTGC TTATAAGCCG CTTCATGCTC TTCATCAATA    13560

ATCATGACAC CCAGATTTTT CAGAGGAGCA AAGATAGCAG ATCTGGCACC AACAACAACT    13620

TGGGCATCGC CACGCTCCAC CTTGCGCCAT TCATCATACT TTTCACCATT GGATAATCCT    13680

GAGTGAAGAA TGGCTACCTT GTCCCCAAAA CGTGCTATAA AACGCTCGGT CATCTGAGGA    13740

GTCAAGGAAA TCTCAGGTAC CAGCAAAATA GCTGTCTTGC CCTTATCCAG GGCACCTTGG    13800

ATAATCTGCA AGTAAACCTC GGTCTTCCCA CTTCCTGTAA TCCCTTGAAG TAGAAAGGGA    13860

GGTTGAGAAC TGCCAATAGA ACTCACAACC GCATCACGCG CCTGTCTTTG TTCTGGATTT    13920

AACTCCAAAG GTCTACTTGC TTCAATTCCT TCAAAATAAG CAGCCGAGCG TTGAACTTCC    13980

TTTTGGACTA TGGTAACAGC ACCTTGATCC ACAAAGAAGT TGACTTGCTC TCGCGAGTAG    14040

GACTCTAACA AGCTAGCCAA GGAAGCGCTC TCTGGATGAG ACAGCAGATA ATCTCTCAGT    14100

TCCAACTTTT TCTTGGCACG TGTAGAAATC TCAACACCTT CTAATTGAGC ATGGTCAACC    14160

TCATACCAAG ACTGGGTCTT GACCTTCTTT TGATCGACTC CCTGATATTC CAGACCAAGC    14220

AGGCCTTTTC TAGTCAAACG CATCATTTCA GCTTGCTTGG CAAGGTCTAG TGAAGAAAAG    14280

GCTAGCGAAT CTTCTGAACC AAACAGGCGC ACTCGTTCTT CCTGACTCAA GCCTTCCAGA    14340

GGATAGAGAA TCTTGTCATA GCTAGAATTC AGAAACCCTG GAAGCATGGC CTTGAGGATA    14400

GAGATTTTGT AGGAGAAGAC AGATTTGCGT AACTCCTCAG CCAGCCAGAG TTGTTCTGGC    14460

GTGAGAACAG GAGAAAAATC CAGCACCTCT GCAATATCTT TTAAATCTTG CTCCATCTCT    14520

TCTCCATCTG ATTGGGACTT CAAACCAAGA ACAATCCCTT GAATCAGGCG ATTACCCTTA    14580
```

702

```
CCAAAAGGCA CATGAACCCG CATCCCAACT TCCAGCATTC CCTCAAATTC CTCCGGAATC    14640

CTGTAACTAT AGGGCTGGTC CGTCTGCATC AAGGGCACAT CTACGATAAT CTTAGCTAGG    14700

GCCATCTTCT CACCTCCTCC TTGTCAGTAC ATTCTTGCAA TAGAAAAAAT AAGATTGAGT    14760

CCCCCCAACC TTAAATTTTT TCACCATCTT CTTTTTCTTT AGCAATTTGC TCTTTGATTT    14820

TCTTTTCTTC TTCTTCTTTG CGGCGTTTTT CTTCTTCGAT ACGGCGACGC ACTGCTTCAC    14880

GTTTTCCTTC TGGATCTGGG TGAATTGTAA CGTTTCCTGA TTCGATTTCT TCTAAAGCGC    14940

GAAGAGTTGA TTTTTCAGAC TTGAAACCTT GAGTTGCTGG GGCACCTGCT TCCAATTCGT    15000

GGGCACGTTT TGCTTCCAAG ATTACGAGTG AATATTTTGA AGGAACCTTG TCGAGCAAGG    15060

TATCAATAGA GGGTTTTAAC ATCATTTGCT TGTACCTATT TTCTAAATTT TATCGGGTAG    15120

TTGGAGATTT TGGTAACATC TCCTGATAGT GACCAATGAC ACGATCCACA CAGAAGTGTT    15180

CTGCTTCAAT CACACATTTG ACACGTTCAG CAGCTAGGGG TACCTGATCG TTGACAATCG    15240

CATAATCATA CTCACGCATG AGGGCAATTT CTTCCTTGGC CTTTTCGATT CGTTGGGCAA    15300

TCACTTCTGC ACTATCTGTT CCACGACCTA CCAAGCGATC TTGCAATTCA TCCAAATCTG    15360

GTGGTGTCAG GAAGATAAAG ACAGCATCTG GAACCTTTTT CTTGACCTGA AGAGCACCCT    15420

GAACTTCAAT TTCAAGGAAA ACATCGATTC CCTTGTCCAA GGTTTCATTG ACATAGGTCA    15480

GAGGAGTTCC ATAGTAGTTA CCGACATATT CTGCGTATTC CAACATCTGT CCTTGACGAA    15540

TCAGCTCTTC AAATTCTTCA CGAGTACGGA AGAAATAGTC AACACCGTCC ACTTCTCCAC    15600

GACGTTGTGC GCGTGTCGTC ATCGATACAG AATATTGAAA TTGGTTTTCA GAACTCTCAA    15660

AAATCTCTCT TCTAACCGTT CCTTTTCCAA CCCCTGAAGG ACCAGAAAAA ACGATTAGTA    15720

AGCCTCGGTC TGCCATTGTG TCTCCTTTTA GTCAATCTGT GAAATAACAT TTCTCTAGAA    15780

TAATGGCAAA AAGCCAGATT ATCCTTTACA GTCTTTCTAT CTAGTGTAAC AAAAAAGCAG    15840

TAATTTTTCA ACTGCTCTTT CTTATTTATT TAGCATAATC TACTGCACGA AGCTCGCGAA    15900

TCACGGTTAC CTTGATATTT CCTGGATAAT CGAGATTGTT TTCAATTTTC TTACGAACTT    15960

TGTGAGCCAA GATTGTGACT TTGTCGTCCT TGATTTTTCC TGGATTGACC ATGATACGAA    16020

TTTCACGTCC TGCTTGAAGG GCAAAGCTAG TTTGCACTCC TTCAAAGCCG TTAGCAATTT    16080

CTTCCAAATC ATGGAGACGC TTGATGTAGC TTTCAAGAGA CTCACTACGA GCACCTGGAC    16140

GGGCTGCGCT CAAGGCATCT GCTGCAGCGA CGATAACTGC TATCACGCTC TCAGCTTCAA    16200

CATCTCCGTG GTGACTAGCA ATCGTATTCA CCACAACTGG GGGTTCCTTG TACTTACGGG    16260

CCAATTCCAT ACCGATTTCA ACGTGGCTAC CTTCAACCTC ATGGTCAATG GCTTTCCCGA    16320

TATCGTGAAG GAATCCAGCA CGACGGGCAA GAGCCGCATT TTCACCAAGT TCGCTCGCCA    16380
```

703

```
TGATACCAGC CAACTTAGCA ACCTCAATCG AATGGCGCAA AACATTTTGT CCATATGAAG    16440

TACGGAACTG CAAACGTCCC ATAATCTTCA TCAAGTCTGG ATGAAGGTTT GGCGCACCAA    16500

TTTCATAGGC AGCAGCCTCA CCGTATTCAC GAATCTTATT GTCAATCTCT TGACGGTTTT    16560

TCTCAACCAA CTCTTCGATA CGAGCTGGAT GTATACGACC ATCTTTGAGC AACATTTCCA    16620

TAGTCATACG GGCAATCTCA CGACGAATCG GATCAAATCC TGACAAGGTC ACCACTTCTG    16680

GTGTATCGTC GATAATCACA TCGACCCCTG TCAAACTTTC AAAGGTACGA ATGTTACGAC    16740

CTTCACGACC AATAATGCGT CCCTTCATAG TATCGTCTGG CAGATGAACT GTTGAGTTTG    16800

TTGACTCCGC TACATATTCA CCAGCGATAC GTTGCATAGC TTGAACCAAG ATGTCCTTGG    16860

CCATTTTGTC AGAACGTTCC TTGACCTCTT GCTCAGCTTC GCGAATGCGA CTGGCAATCT    16920

CCCTGGTCAA GTTTTCCTCT GTCTGAGCCA AGATAATATC TCGTGCTTCT GCCTGAGACA    16980

GCGCACCAAT ACGCTCTAGT TCTGCTTCTT TTTGTCTTTC GACTTCCTCT AATTGCTCTT    17040

CACGCGCATC AAGGTTTTTC GCTCTATCAG AAATACTTTG TTCTTTTTGT TCAAGTGTTT    17100

GTTCTTTACT CGTCAAATTG TCGTCCTTAC GGTCAAGGCT AGTAGCTCTC TCTGTCAAAC    17160

GACTTTCGAT TTGTTTGAGT TCTTGACGTT CTGATTTGAA TTCAGCGTCC ACTTCTTCAC    17220

GGTATTTTCT GGCTTCTTCT TTGGCCTCCA ATAGTGCTTC TTTTTTAAGA GACTTGCTTT    17280

CACGTTTGGC TTCATTAACA AGTAAATCCG CTTCACGCTC AGCTTGTCCA CGTAAATTAG    17340

TTGCTTCTTG TTCAGCATTT AAAAGCATCA ACTCTGCAGC TTCCTGAGAT GATTTCATCT    17400

TAGCTGAGAT GCTGACATAT CCAATGACTA AACCAATGAT GACGGCAAAA ACAGCAATCG    17460

CAAGCGACAT GATTTCCATG TTTTTACCTC ATTTTATTGT TATTCCGAAT GACATACATT    17520

CTTTTACATT CTACCATAAA AAAGTGATTT TCACAAACCT AAAATAGAAT ATGTTTTGAG    17580

GAATTTGGAA CACATTTACC AAAATAAACT TGTTGTTTAG AAATAGTAGT TTAGTAGAGA    17640

CTTGAGAAAA AGCCTACCTT TCAATAGACT TAGTAATGAT CTTTAAAGGA CAAGAAAGCC    17700

ACGCTATCTC CATCCATCAT ATAAATCAAG CGATTTTCTG CATCAATACG CCGTGACCAG    17760

GCTCCTTGGT AATCATATTT GAGTGGTTCT GGTTTACCTA TTCCTGTAAA GGGATCACGT    17820

TGAATATCCT TGATTAGTTT ATTGATTCTT TTTAACGTTT TCTTATCCTG ATTTTGCCAG    17880

TAGCAATAAT CTGCCCAGGC ATCTTCTGTA AACTTGAGCA GCATTTCTTA CTCCTCAATA    17940

ACATGGACCT GAGTACTTCC AGCACGAACT TGAGCCATTC CTCGCAAAAC CTTATCAGAA    18000

AGTTCCTTAT TTTGAGCAAT TCTCAGGGTT TCTTGGATAC TATCCCACTC ACTCTTTGAA    18060

AGGACTACAA TGTCCTCATC TGGATTTTTA TTGACCACCG TCAAAGGCTC AAATTCATCA    18120
```

704

```
TTTACCTTCT TCATGTAGTC CTTTAAATGA TTTCGGAATG TTGAGTAAAG GACTGCTTCC          18180

ATAACCATAC CTCGTTTTAG CTCTTTTCCA CTATTATACA CGAAAAGAAA GAAATTGTCA          18240

GGAACTTGTA CAAGATTTTC TTTTCTATCT ATTTATACTC AATGAAAATC AAAGAGCAAA          18300

CTAGGAAACT AGCCGCAGGC TGTACTTGAG TACGGCAAGG CGACGTTGAC GCGATTTGAA          18360

TTTGATTTTC GAAGAGTATT ATTCGTAAAA AATCTCAAAA AGCCTACCTT TCGGTAGACT          18420

TAGTTTGTTT CTATTC                                                          18436
```

(2) INFORMATION FOR SEQ ID NO: 88:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 7001 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

```
ACGTAGAAAA ACTATTTCTA TCACAGATAA TATTCCGTAT GTTGTTGGAG GTATTGAAAT          60

AAACGTCCTA GGTATCTTTC TCAGTCTATG TGACTTACAA GGGAAAACTC TTTTCGAGAC          120

AGAAATTTTG AATGAAGATT ATCCTATTTC AGAAATCAAT TCCACCATTA CCAATATGAT          180

AAAAACAGCT ATAGAGTACG TCCCTTTGGA AACAAAATTA CTTGGATTTG GCTTATCAAT          240

ACCTGGACAT TATAACAAAG ACTCCGGAAG TATCATTACA AACAACCCCA TATGGGAATC          300

TTTTAATTTA TTAAATGTAA TTAAAAGATT CAATTTTCCT TTTATTGTAA AAAATAATAT          360

CGATTGTATG GCTATAGGAC AATACCTTTT TAATCCACAC AATACCCCCG ATAACTTTAT          420

TTTCCTACAC GCTGGATTAG GTATTTACAC TTCCTTTTTC ACAAAAGAAA AAATAGGAGC          480

CTCTAAAAAT CCTTATATCG GAGAAATTGG ACACACCATT GTCGAATTGA ATGGGCAATA          540

TTGTGAATGC GGAAAAAAAG GTTGTTTACA AACATATATT TCGGATGCTT GGTTAATCAA          600

ACACGCCCAA TTATTATTTA AAAATTCCCA ACTAACTGTA CTAAAAAGCC TTGTAAAGAC          660

TGAAAAAGAC ATTCATTTAG ACACCCTTTT AACGGCTTAT AATTTAGGCG ACTCCGCTTT          720

ACGTCAACAA ATTGATAAAG GAGTCAATTT ATTAGCCACT TCTATTGCAA ATCTCCTCCT          780

CATCAATCCT GCTGATAAAA TCTATATCAA CAGTCAATTG CTTAATTATC AACCTTTCAC          840

TCATGAAGTC AGGGATAAAA TCCAAGACCA GCTCCACTTC GTTCCCTTTA CTCGTAATAT          900

AGAAATTGAA ATTTTACCTT ACAACAAACA TCGTGGAAGT ATAGGAGCTT GTGCATTAGC          960

TATCGTCGCT TTTTTCATAG AACATAGCAA TGTATTACAA GATATTATTT CACCTTAATA          1020

TATTAGAAAT CTATAGACCT GTTTAAATCA ACTATAACCT GTAGTAGATA TCTCGTATTT          1080
```

705

```
AGACAATATG AAAACAAGAC GACTTCCATA TAGGAAACCG CCTTCTCGCT ATGTTGAGTG    1140

ATTTATATTA AAATAACTTT TCTTCTAGCT GCATTTTATT ATTATAAAAA CATTCATCAT    1200

AACCCCCAGA ACTTAAATAA CAATTTTTAT TCAAGATACA TACTCCTAGA ATAAACTTTA    1260

TATGAAATTC TCATTTTTGT TTTTACAATT CTCCTTAGTT AAATCTTGTT TAATATATGT    1320

TTTACATATA GTATTTAGCG CCACATAGTA CTGAACTCTC TCCAAAAACG GTTATTCCTC    1380

TTTGAATAGG GCGTTATCAC AAGAAAAGCA TCTCCACGTT TCAACTTCAT ATGGCTCAAA    1440

AACAATCAAT TGATGCTAAA ACCTGTACCT AGATGTTTCG GTTCATAAAA CCATGAAACT    1500

GTAAAAGTGG ATGAAATTGA TAGCGATAGT CAAATCAAGA GGCATCATAA CTCTAAAAAG    1560

TCACAATATA TAAGTTCATC CTCGGAAAAA TATCATTCTA ATTGTTGAAA TGCCTACATG    1620

AAAAGAAACG TCAAATGCTC ATGAAACAAC GAATACAGGT ATCAAAACTA TGACAAAACA    1680

AATCCCTAAA TTTACTAAAG ACACTGCTCA ACTTTACACC TGTAAATGGT TGTTGTATAA    1740

TAAAGTTACA AAGATGTACG ACCACACTGT TGTAAATCAT AGTGTTCGCG AATATATTAC    1800

TGATAGCATT TCTACAAATA CAAGTAAAGA GAGCGGATGA GATTCAAACG AAATATGTCA    1860

GTGCTTTGGC ATTCCTAGCC TTCATATCAT TTAAAGAATT CTATAGACAA AATTTTTTCC    1920

AATACAGACA CTCGTAACAA CTGCTTCATT TTTCTACCAA CATATTTAGG AACAGGATAA    1980

GATACAAGAG TATTAATCCA TAGCTCAGTT CTATACCAAT CTAAGACAAA TAAGCTAAAA    2040

AAACGATTGA TAATAAGCAA ATAGATTCCA AATTTTCTCT ATCTGCTCAT TTTAATAAAC    2100

AATACTAGTG TAACTATCCT TCCAGTCAGA AGCTTGTCAA ATCACACCGA AAATTCTTCT    2160

AAAATTTATC TCGTTAGGCA ATCAAGCAAA AACTCGACGA TAGTACAAAC ATTATCATAC    2220

AGGATTGACT TCCTAAATTA TATACTTTAG TAAGGTTTTC GGATAAGAAA AAAGGTTCAT    2280

TTTACATTTC TAAACATTCT TTTCTAAGAT GAAAAACAGA ATTTTTCGAT TGTGATTTAA    2340

AGCAACAAGA AGATTTTCAG TATCATCCTA TAGATACGAG CTAATTAAGA AAAACTACAT    2400

TTTTGAATAT AAACTACAAT AATATAAACT AAATTTTATA GGAGGAAGAC AATGGATTGG    2460

TACGATTATA TGATACAGGC ATCCAAACAA TCACAATTCA ACGCAAGCCA TTGGTTTCGC    2520

TATTTGCGAA AAGTTATTTT TGAAGACTAT TCTTATTTAA CAAACCAAGA TGTAGAAAAG    2580

TTGCTAGACT CCAAAGAACT AACCCGTTTT CAAAAAATTA GCTTGAAGTA TGCCTTTCAA    2640

GAGCATACTC CAACTCATAA ATATGTGATT TCATTAAATA AACCTGCTAA GTTAACCAAT    2700

GTTCAAAAAT TGATGGAGAA ATACAAACAT GGATAAAATG AAACCGGTCT TCCAAGCCCT    2760

AAATAAGGAA TTAATTCAGG AAAATCTGAC TTTAACAATT ATCTGTGTCG GTGGTTATGT    2820
```

706

```
CTTAGAATAT CATGGTTTAC GTGCCACACA AGATGTTGAT GCTTTTATGG CTCTATAATA      2880

TTTGTAGTGG GTAAATCCCC TATGGATATT ATGGAGCCTA TTTTTGTGTA GAAAAAAAGT      2940

CCCATATGAC CTATAATGAA AAGCGACAAA ACAACTCATT AGAAAGAATC ATATGGAACA      3000

ATTACATTTT ATCACAAAAT TACTAGACAT TAAAGACCCT AATATCCAGA TTTTAGACAT      3060

CATCAATAAG GATACACACA AGGAAATCAT CGCCAAACTG GACTACGACG CCCCATCTTG      3120

CCCTGAGTGC GGAAACCAAT TGAAGAAATA TGACTTTCAA AAACCGTCTA AGATCCCTTA      3180

CCTCGAAACA ACTGGTATGC CTTCTAGAAT TCTCCTTAGA AAACGCCGTT TCAAGTGCTA      3240

TCACTGTTCA AAAATGATGG TCGCTGAAAC TTCTATCGTC AAGAAGAATC ATCAAATTCC      3300

TCGTATTATC AACCAAAAAA TTGCGCAAAA GTTGATTGAG AAGATTTCTA TGACCGATAT      3360

TGCTCATCAG CTGGCCATTT CAACTTCAAC TGTCATTCGC AAGCTCAATG ATTCTCACTT      3420

TGAGCATGAT TTTTCGCGTC TTCCTGAGAT TATGTCCTGG GACGTTGAAA CAGTCCGGGG      3480

AGTGACTGTT TCAATCGGGA GATGGAGATG AGCTTTATTG CGCAAGATTT TGAAAAGCTC      3540

GATATCATCA CTGTTCTTGA AGGTAGAACA CAAGCTGTCA TCCGAGATCA CTTTCTTAAA      3600

TATGATAGAG CCGTCCGATG TCGCGTCAAA ATTATTACTA TGGATATGTT TAGTCCTTAC      3660

TATGACTTAG CTAGACAACT TTTCCCGTGT GCTAAAATCG TTCTTGATCG CTTTCACATT      3720

GTACAACATC TTAGCCGTGC TATGAGTCGT GTGCGTGTCC AAATCATGAA TCAGTTTCAT      3780

CGAAAATCCC ATGAATACAA GGCTATCAAG CGCTACTGGA AACTCATTCA ACAGGATAGC      3840

CGTAAACTCA GCGATAAACA TTTTTATCGC CCTACTTTTC GTATGCATTT AACCAATAAA      3900

GAGATTTTAG ACAAGCTTTT GAGCTATTCA CAAGACTTGA AACATCACTA TCAGCTCTAT      3960

CAACTCTTGC TGTTTCACTT TCAGAATAAG GAACCGGAGA AATTTTTCGA ACTTATCGAG      4020

GACAATCTTA AGCAGGTTCA TCCTATTTTT CAGACTGTCT TTAAAACCTT CCTCAAAGAT      4080

AAAGAAAAGG TTATCAACGC CCTTCAACTA CACTATTCTA ATGCCAAACT GGAAGCGACC      4140

AATAATCTCA TCAAACTTAT CAAGCGCAAT GCCTTTGGTT TTCGAAACTT TGAAAACTTC      4200

AAAAAACGGA TTTTTATCGC TCTGAATATC AAAAAAGAAA GGACAAAATT TGTCCTTTCT      4260

CGAGCTTAGC TTTTTTTCAA CCCACTACAG TTGACAAAGA GCCGGAAAAA GGAACAGCCT      4320

TAGCTTTCCT TTCATTTCTT TTTATTTCCC TCGTAGTAAA CGTGCTAGCT TCCACAAAAC      4380

AAACAGGATT CCCAGAAATG CCAGTACCAC TAGCCCACGG TACAACCATT GAGAGGTTGC      4440

AACACGCGAT ACAGATTGTC CTTCTTTCGT AAAAGCAACC CTCGCAACTG CAGCTGTTTG      4500

TGGATCTGAT TTTTGATAAA CAGCGACTCG TTCAAAATTC ACTAATAAGC GTTTATTAAA      4560

GGTAGGAATC GGATCGCAGG TTATCAAGGT CATGATATTT TTAGAGCTAA CCGATTCTAA      4620
```

707

```
TTTTTCCCAT TCCGACGGTA AAATAATCTC TGTGTCCATC ATCTGATATT CTACAATTTC    4680

CTGGCCATTA TCATAATAAA GAGCATCTCC AACTTTTAGC TGATCCAAAT GGCGGAAAAA    4740

GACATGGCTT GGCTCTGCAC GGTGCCCAGC AATCACTGAG CGAATCCCTG TACCATCCAG    4800

AGGCAGCGGT GTACCATCCA CATGAGCCAA GCCCATCCCT AAATGATGAT AATCTGCTCC    4860

CAAATAAACC GGCTCCATGA TTTCCAAACT TGGAATAGAC AAGTAACCAT AGACTGCATC    4920

AGGGTCGTCA GACACTTGGT AATTGACCTC ATATCCCTCC GCCAAAAAAG GATCTACAAT    4980

GCGATTTTGC GAAGCCAAGC GTTGATTGTA GGCGAGAGAA TGGTTCTGTT GTTCTTGGTA    5040

CATTTCAGTT GTCATGGATT TCACAAATGT AGCATGACCT TTCACCTGTC CAAGAGACTG    5100

CAACACCATC TGTCCAAAAC AATAAATAGG AATCAAACAG GCTACCAACA TCAACAAGTA    5160

TCCCAATAAG GCTCGTAGTT TAGTCCTTGA CATGACGCCC CTCCAATTGC TTTTCTAGTC    5220

CTTTGACAAT CCGTCGATTA CGATACACGC GATACAGCAA GAGAAGGATG ACCGCCATCG    5280

CTCCTAGTAA TAACCACAAC CAGAATTGCC CACGCTCTCT CACCGCTCGA TTCCGCTCTG    5340

CAATTGGTGC CGTATACGGA ATCCGCTTCC CACGTACCAA CAGACGATGA CTGTTAATCA    5400

TATACGGTGT ACAAGTCAAC AAGGTCGCAT AATCTTCCCC ATGTTGAATC AAGACAGGCT    5460

CAAAGTCATT CGGCTCCACC GTCACTATCT GATCCACTTG GTAGGCCAAC ACCTGATCTA    5520

AAACGTGAAG ATAAAAGATA TCCCCTTTTT TCATCTTATC CAATTGACTG AACAATTCTG    5580

CCGTTGGCAA TCCTCTGTGA GCAGTGATCA CTGTATGGGT ATTTTCACCT CCAACAGGCA    5640

GCGAAGCCCC TTCTAACAGC CCTGCCCCTT TCTGAAGAAT GTCCTCACTC GTTCCGACAT    5700

ACATCGGAAT TTCCTGATCA ATCGCAGGAA TTTCCACATA GCCAATCCGC TCATGGACCT    5760

TTAGCATATT GGCATATTCT GAGACGCCTT TCTTTTTCTC TTGCTCTGTA AAAGGATCAA    5820

GAATTTCAGA TGGTTTCAAG GTCGCATTGA AGGCTTGAGC CAAGCGCCAA CGCTCCTCAA    5880

GTTCTGCCTT ATCCATCTGG GAAACCGTCT CATCAAACTC TTTAATAACC TCGTTTGACT    5940

CAATACGATA ATAATAACGA GACACCAATG GATATATCGC AACGGCGAAT CCTACTAAGA    6000

AAATCAGAAG AAGGATCAGC GGATGTTTCT TCTTTTTTGT GCCTTTTTTT CGTGAACGTC    6060

TACTGTTGTC CATCCTCCAC CTTCACTTCC TTCCTTGCTG CTTTCAGCGC CTTCAAAGCC    6120

TTTTCCGGTT GTTTTTTCTT CTTGCGCAAG CGTCGAATAA TCCATAAAAG AATCACAATC    6180

AAACCAACTG CCACATAAAA CAGGTAGCGA TAGAGATGAC TGAGTTTGTT TGCTGCAATA    6240

AATTCTTCCT CAACCTCTGC TACGTACGGT ATCCGATGCC CCCGAACCAA TAGACGATGG    6300

GTATTGATCA TGTATGGCGT ACAAGTCAGC AAGGTCACAT AATCATGACC TGGTACAATC    6360
```

708

```
AATAAATCAT CAAAGTTCGT CGGCTCAATC ACCTTTACTT GATCCACTTG ATAGGCCATC        6420

ACTTCCTTGA TATTGTGCAC ATAAAACTTA TCCCCAACTT TAAGTTTGGT CAAATCCGTA        6480

AACATCTTAG CTGTTGGCAA ACCTGTATGT GCCGTAATCA CCGCATGGGT CGAATTGCCT        6540

CCGATCGGCA GAGAAGTTCC CTCTAGATGC CCAGCCCCTT GCTGCAATAC CTCTTCAGCA        6600

GTACCAGCAT AAACCGGCAA ATCCACGTCA ATAACGGGGA TTTCCACATG CCCCATCCGC        6660

TCATGGATTT CTAACATACG TGCATACTCT GCTCGCCCTT TTTTCTTCAT TTCTTCCGAC        6720

CAAGGATCGC CACTCACTAC ATTATTCAAA GAGTCATTGA AGGCTTGTGC CAATTTCATT        6780

CGTTCATCAA TGTCAGCCTC ATCCAACGTT GCTTTTTCCT TATCAAAGTC AGCAATTTGT        6840

TGATTTGATT CCACTCGATA ATACAAGCGA GACACCAGCG GATACGCCAT TACCGCCATT        6900

CCAATGAAAA ATACCACTCC TAATAGGAGA TTATTTCGTT TTTGCTTTTT TGTTTTTACC        6960

ATTTTTATCA GCATCCCTTT ATCTTCAAAC TTCAGGGTAT C                            7001
```

(2) INFORMATION FOR SEQ ID NO: 89:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 10411 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

```
GAGGGAGCTT AAGAAGTTAC CACCGTCCTC TAGCGCCTTA TCCGCATCAA AGTTAAGGTT         60

GATATTTTTA AAACTGTCGC CAGCTTGTGA TACGATGCTT TGTTTAAGGT CATTTAGGGT        120

TTTAGTGAAA TCTGCATTGC TGAGGATATC ACTCTTTGAG AGATTCAAGG CAAAATTGAT        180

GATGATATTG ATCTGGTTTC CTGTTATGAC CTGATCAAGT TTGTAATTTT TTAAGGTATC        240

TTCAACAATC TTGCGGATAT CTTCTTCTGT CAGATTTCCC TTACTTTCTT TAGCTTTGGC        300

GAGTCCTGAC TTGATATCAG CTAGGGCAAC GTTTAATTTA TTAGCATCAT AGCCTGATTT        360

GTCCTTGTTT TCAGCATTGA TATCTGACAA AGCTTTTAGC TCTTCTTGAG CCAAATCTTT        420

ATTAGCTTGT GGCACCTTGG CTCCATTAGC CTCTAGCGAA TAGTAAATCC CTGCTAAAGC        480

ACTTTCTCCT GTAACTGGAA TAGGGGCTGC TACAGTGATT TTGGCATGTT CCATACCCAG        540

CGTTACTGCT GCGTTTCGGT ACATATCCTG AGTCACCTTA GTGATATTTT CTGGTGTTTC        600

AATCTTGACC TCAAGTGGCG ATTTGTCACC TAGCTTTTGA ATCTTGGCTG ATGAATACAA        660

CTGTAAGCTA GAGTCATTGG CCACATTCAT GATTTTAGAA TAAACATCAG GTGTCATGGT        720

CTTGAGTTCT TTGGTATCTG TTGAGGCATT GTAGCCCAGT TTTTTAAGAG TTTGATTTTT        780
```

709

```
TTGGTCTTCA GATAGGGAGG AACCTAGGAC ATATTCAGGT TGGACATAGG TTTCATCGAT     840

AACTTTTTGA ACATCTGTTG CTGCATGGAC GCTATTCATA GCTGTTACTG CCCACAAGAT     900

CGCAGCGCTA GTCAGAAAGA GTTTCTTTCT CATAGGGAAT TTCCTCCTTT ACTTCTTTAG     960

AGTAATATAT CTATCTTAAA GAAAACTTAT AACAAAAACA CCTGGTCTAG CCAGATGTTG    1020

AAAAGAGAGT GAAACATTTG ATGATGTAAA GGTTAAGTCG TACCTGTCTA GAATAATAAT    1080

AGTTTCCTCC ATTTACATAG AGTTCAGCAC CGTGAAAAAT GGAAATGGGG TGAATATAAC    1140

TATAAGTCTT TCCAGTCCTA TTACCAAGCA AGGGGGCAAC AGTCTCACGA GAGTACTGTT    1200

TGGCTAGAGC CAGGGTATTT TCCTTGCCAT TTTGGGCGAT AAAATCGATA TAGGCAGGTC    1260

CAAAATTATA GGCTTGAACA GCTGTCCAGA TATCTACCCC CTTCTTCTGC GCCAGATAGA    1320

GATTGCCTGT CAGAGTTTGA ATGCCTTGCC GAATGCTAGA GGCATTATCA TTGATGGTGT    1380

TGGTGGAACC ACTTGCAGAC TCACTAGACT GCATAACATC GCCTTCTTTT CCTTTTGTTT    1440

CAGTATAAAT CATAGCAAGC ACAAGCTCTT CGTTTGCTGG GGTGTCTTGT TCACTCAATA    1500

TTTCTCGCAC CATGGGTTGA TAGGTCATGA CTTGTTTGAC ATCTTGATGA ACGCGGTAAG    1560

CTTTATAGCC AGCAAAAAGG AAGACTGCTA GTACAAGCAC TCTTCGAATT CGTTTAAACA    1620

TTATTTACTT TGGATATCCT CGATATTTTT GATTAAGATA GAGTAGGTTC CATTTTCGTT    1680

TTGGATAAAC TCAACAGACT CGGCGTCTTG ATAGACGTTA TTGGGAACGA TGAGCTCAAT    1740

TCCATTTGAT AAGGAGAGTT TTTGGTTTTC AAATTTCTTT AATTGGCGAC TGGCATCAAT    1800

TTCATCAAAT TGAACAGGTT CTGGTACGGC TTCTTTGACT TGGTCAATAA AGCTCAAACG    1860

AGCCGTCAGA TTGTTGTCAA AAAGGTCATT AGCCAATTTC TCAGGTGACA ATTCATTGCT    1920

TTCTTCTAGG TTGTTGAAAA TAGCTGATTT GACCTTGGAT TGAAATTGAA AATCATCTGT    1980

GTTAAAAGAT TTAGCAATTC TCTGGGCTGT TTTTTCCAGT TCCTTGATAG ATTTTTTAGG    2040

AGAAATCTTA GGAGCGACAG CAAGAAGATT ATCTGAAAAA TAGTTCAAAA AAGTCCCGTT    2100

GTACTTGATT CGTTTTTCAA TCAGGTGATA CTTGCTACTC TGAAGATTGA CCACCAAGGC    2160

CTCATCAGCT CCTGTTCCAA ATCCAGGCAG GTTATTCTGA GTTAGCTTGA TTGGATTATC    2220

AACTTCTCCT CCGAGGTGGG TCAAGGTCTC CCGCAGGGCA ATTCGCAAGA AAGCGAAATG    2280

TTCTACACCT TCTTTAGAAA ATTGCACAAA AATCAAGTCA TTGGTCTTGA GATTTTCAGA    2340

AATGCTAAAC TCCTCTTTCC AGAGATTAGC CAGCGTTACT GATGTCTCCA ACAAATCGTC    2400

TGTAATATGA TTGAAGAAGG GATTTCTTC TTCGAAAATC CCAGTCTTGG CTTCATCTGA    2460

ATACACATGT TCAATTTTTT TACGCAGGTA TTCTTCGATT TTTGGAGTAA TATTGAGAAA    2520
```

710

```
CTTATCTGCT AAGAACAGTT CGGTATCATC CGGACTGAAC TGGTGAATAA TGGCTTTCTT        2580

AAATATAAATG TCCATAAAAG TTTTAGTCCT CGTATAATGG GAAGGCATCT GTCAATTCTT       2640

TGACTGCACT TCTCACTTCT TCTAATACAG CCTCATTTTC TGAATTCTTA AGGGTTTTAA        2700

TGATGAGTTC AGCCACTTTG CGACTTTCTT CTTCACCAAA TCCACGTGCA GTAATGGCTG        2760

CTGCTCCGAT ACGAATCCCA CTTGTCTTGA ATGGTGACAA GCTTTCGTAA GGGATTGAGT        2820

TTTTATTTAA GGTAATATTG ACTTCATCCA ACAAGTTTTG AGCAACTTTG CCGTTTTCTA        2880

CAACTTTAGT CACATCAACA AGGAAGAGAT GGTTTTCAGT TCCACCTGAA ATAATACGGA        2940

AATCAGGGTC TTGCAAGAAG ACATCTGCCA TAGCCTTGCT GTTCTTAATT ACATTGGCAG        3000

CATATTCCTT GAAGGCTGGA TCCAAAACTT CTTTGAAGGA AACTGCCTTA GCCGCCACAA        3060

CATGCTCTAA AGGACCGCCC TGAATACCTG GGAAAATAGC TGAATTGATT TTTTTAGCAA        3120

GTTCTTCGTC ATTGGTCAAA ATCAAACCAC CACGAGGTCC ACGAAGGGTT TTGTGGGTCG        3180

TTGTTGTTGT GATATGAGCG TATGGAACTG GGCTTGGATG AAGGCCAGCC GCAACCAAGC        3240

CAGCGATATG GGCCATGTCC ACCATGAGCT TCGCACCGAC AGCATCTGCG ATTTCACGGA        3300

ATTTTGAAAA ATCGATAATT TGAGAATAGG CTGAAGCACC AGCTACAATC AGTTTTGGTT        3360

TTACTTCTTG GGCTTGTTTC AAGATAGCAT CAAAGTCTAA GAGTTCCGTT TTAGGATCAA        3420

CACTATAAGA AACAAAGTTG TAGGTTTGAC CAGAGAAGCT AACAGGAGCC CCATGAGTCA        3480

AATGACCACC TGATGCCAAA TCCATTCCCA TAACCGTATC ACCTGGCTCA ATCAAGGACA        3540

TGTAAGCCGC ACAGTTAGCT TGGCTTCCTG AATGTGGTTG AACATTGGCA AATTTAGCAC        3600

CGAAAATTTC TTTTGCGCGT TCAATAGCAA GAGTCTCTAC AACGTCTACT ACATCAGTTC        3660

CACCATAATA ACGGCGTCCT GGGTAACCCT CGGCATATTT ATTTGTCAAG ATAGACCCTT        3720

GAGCTGCCAT AACAGCCTTG GAAACTACGT TTTCCGAAGC AATTAACTCG ATATTATTTT        3780

GTTGGCGTTC TTCTTCTTTG GCAATAGCAT TCCAGAGATC AGCATCATAT GCTTTAAAAT        3840

CATCTTTGTC AAAAATCATA GGTCTTCTCC TTTATTGTGT GACTAGTCCA TTAGTTTGAT        3900

TTTACAATAA GAAAATCAAA CTAACAGATG CGAATAAACC GTTTCTGCAT TTTATCACAA        3960

GTATAGCCAA CTTTTTCATA AAATGCATGA GCACCCAGAC GATGATTGGC AGAATTTAAG        4020

CGGATAAACC CATAACCACA TCTTTTTGCT TCTTCTTCCA ACCCTTGTAG TAAACTTTTA        4080

CCAATACCTT GACCTTGCGC TTGAGGTGAA ACTGCTAAAG CTAAGATATT AAATCCTGCT       4140

TTGGAATAGA GTGATTCGTA AACTTCAGCG TGGACATATC CAAGTAAGAC ATGATTAGCT        4200

GCATCCTCAT AGCCAAGTAG GAAATGATGG GAATCCTGAG ACAGTCTAGC TAGTTGGCTA        4260

GCCGTTTCCT CTGGACTAAA AGTATAACCC AAAGCCTCTT GGTTGATGTC ACATATAGCT        4320
```

711

```
TTCACATCAG TTTCTCTTAA ATCTCTTAGC ATCTCATTCC TCCTCAAAAG AAATCTTTGG    4380

CAACCGAGCA AGAATATCTT CTCGCTTAAT GGCCCCTTGA CGTAAGATTT TCACCTTGTC    4440

TCCCGACAAA TTCAAAATAG TTGAATCCTG TCCAGTTAGA AAAGCATCGT CTTCCAGACC    4500

CAGAACCTCT TGGTCAAAAT CCTCTAGAAT TTGATTAAAG GTCACTCCAC TCGCCTGACC    4560

TGAGATATTG GCAGACGGCC CAATCAAGGG ACCTGTCTCT CGAATCAAAT CAAGGGTAAT    4620

GGGATGACTA GGCATCCGAA ATCCAACAGT TGCAAGGCCA GAATTGACCC AATAGGGAAC    4680

TCGGTCATTA GCTTCGAGAA TAATGGTCAA GGGACCTGGT AAAAAGATCT CTACAAGTTT    4740

TTGAAGATAA GTTGGCTGAT TCTTTGAAAA GTACAAGATG TCCTCTAAAG AGGCAACATT    4800

GAGATTGAGC GCCTTGTCTC TACGTCGACG TTTAAGCTGG TAAACATGGT CAACTGCTTT    4860

TTCGTCTAGC GCCTTAGCAA AGAGACCGTA AACTGTCTCT GTAGGCAAAA CGACAGCTCC    4920

ACCATTTTCC AACTCTTGTC TAATCCTGTC CATCATCAAC GACAACCATC CTATCTTGAC    4980

CAAATTGGTC CTTGAGTGTT CGTACTCGCT TTTCAGGAAG ATGTTTCCTA AAAAGTTCAG    5040

GAACACTTTG ACCTTGCTTG TATCCAATTT CAAGGTAAAT CTTACCACCA TCTTTGAGAT    5100

AGTCTTTTGC ATCTTCCGCA ATTCTACGGT AAATAGCTAG GCCATCCTCA TCTGCAAAGA    5160

GAGCTAGATG AGGCTCCGAA TACAAGACAT TCAAGCCTAC CTCTGACTCA TCTTCACGAG    5220

AGATATAGGG TGGATTGGAA ACAATTATAT CATATTTTTC AGAAATTTCT GTAAAACAGT    5280

CAGATTTTTT TAAAAATATT TGAAGATTTT GATTTTTAGC ATTTTCGCTA GCTACATCTA    5340

AAGCATCTTG GGAAATATCT GCTGCCGTCA CTGACCAATC TGGTCTGTTT TTTGCTAGAG    5400

CGAGAGCAAT AGCTCCACTA CCTGTTCCGA TATCTAGGAC CATAAGATTT TTCACAGGAT    5460

TTTCAGCCAG GATAAGCTCC ACCAACTCCT CTGTTTCTGG ACGAGGAATC AAAACCCGTT    5520

CATCCACCTT TAAATGCATT CCATAAAAAT CTGCCTGTCC AATGATGTAC TGAGCTGGCT    5580

TGTGAGCTGC TAGTTGCTGG TAAATATCTT CTACAAATTG TTTTTCTTCC TCTGTTGTCA    5640

CCTCCTGCTG GAGGGCAAAA ATAAAGTCTG TAAAAGATAG ATTTTTCAGA CTACGATAGA    5700

CAAAAGAGAG GCTTTCCGCT TCCTCTCCTT GTCTTATCAA CTCTTCTTCA AAATTTGAAA    5760

ATAATTGAGC TAATTTCATT ATTTGTTTAA TTCTTCTAGT TTTTGTGTTT GGTCATAAAG    5820

CACCAAGGCA TCCACAACTT CGTCCAATTT ACCAGACAAA ATCGTATCTA GTTTTTGGAG    5880

GGTCAAGCCG ATACGGTGGT CTGTGACACG GTTTTGTGGG AAGTTATAAG TTCGGATCCG    5940

TTCTGAACGG TCACCAGTAC CGATTGTCGA CTTACGCTCA GCGTCCTGCT CATCTTGAGC    6000

AATCTGAGCA AAGTGGTCAG CAACACGGGC ACGGATGATT TTCATGGCCT TCTCACGGTT    6060
```

712

```
CTTCTGCTGG GTACGTTCTT CCTGCATCTC AACCTTGATA TTGGTTGGCA AGTGAACGAT    6120

ACGAACGGCA GTCGCAACCT TATTGACGTT CTGTCCACCA GCACCAGAGG CGTGATAGAT    6180

GTCGACACGA AGGTCTTTTG GATCAATGTC GTATTCAACC TCTTCAACTT CTGGCATAAC    6240

AAGAACTGTC GCTGTCGAAG TATGAACACG GCCTTGGCTT TCTGTCACAG GAACACGTTG    6300

CACACGGTGG GCACCTGATT CATACTTAAG CTTAGAGTAT ACAGACTGAC CTGAAACCAT    6360

AGCAACCACT TCTTTAAAAC CACCGACACC ATTCATAGAG GCTTCCATGA CTTCAAAGCG    6420

CCAACCTTGG GCTTCCGCAT ACTTTTGGTA CATAGTTAGC AAATCTCCAG CGAAAAGTGC    6480

CGCTTCGTCT CCACCAGCTG CTCCACGGAT TTCAAGGATG ATATTCTTGT CATCGTTTGG    6540

ATCCTTTGGA AGGAGCAAAA TTTTCAGTTT TTCTTCATAT TCTTCTTTTT CAGCCTTGGC    6600

ATCTTTGAGT TCTTGCTTGG CCAATTCTTC CAAGTCCGCA TCTCCGCCTG ATTCCTTAAT    6660

CATCTCTTCG GCATCGACGA TATTTTGAAG GACTTGTTTA TACTCACGGT AGGCTATTAC    6720

GGTGTCACGA TTGGAAGCTT CTTCTTTTGA AAGCTCCATA AAACGCTTGG TGTCTGAAAC    6780

GACATCAGGG TCACTCAGCA ATTCTCCTAA TTCTTCATAA CGGTCTTCTA CAACTTGTAG    6840

TTGATCATAG ATGTTCATTT TTTCTCCTTA TTTCTCAATT GTTAAATCAT AGATTGCTAC    6900

TACTTCATTC TCGGATATTT CCCCAGTTTC TTTAAATCCA TAACTGAGGT AACAAAATCT    6960

TGCCTGTTCA TTTTCTGGTT CATArGACAA CCAAAGTTTA TTGCTTAAAC CTGCTGGCGC    7020

TGTTCGAACA TAGTCTAGTA CTTTATCCAT AATTGGTTTA AAATATCCTT GATTTTGAAA    7080

ATTCTTATCA ATCATAAAAC GAAATAGTAA ATAATTCCA CTACTAATTC CGATCTTTTT    7140

ATCATAAGCT ATCATCACAA AACCTATAAT TGCATCATTA TCATAAACTG CCAATGGAGC    7200

TACAAAATCT CCATTTTTAG TGTAGACGTA TGCTTCAGCT AAACTAATTG CGTTGGTTGC    7260

AATGAATTGT TTTTGATATT CCTTGACATC CAAATTTAAA ACATCAAAAT AATTTTCCAT    7320

TGTAACATCT CTTAGTTCAA TTGTCATAGT TTTGCTCCTT GTTAGAGGTT ATCATTGGCG    7380

CAAAATAATG TTTACGGCAA ACTGAGATAT AGGTTTCGTT ACCACCAATC TGGATCTGTT    7440

CTCCATCGTA AACGGGCAGT CCATCCTGTG TTCGCAACAC CATGGTCGCC TTTTTCTTGC    7500

AATACTGACA GATGGTCTTG ATTTCGTCAA TCTTGTCTGC TAAAAGCAAG AGATATTTGG    7560

AACCTTCGAA CAATTCATTG CGAAAGTCAT TTTTCAAGCC AAAAGCCATG ACGGGTATGT    7620

CTAACTCGTC CACAACACGA GCTAGGTCGT AAACATGGTG GCGTTTGAGA AACTGGGCTT    7680

CATCGACCAA AACACAGTAA GGTTTTTCTG GTAGGTCTCG GATATAGCCA AAGATATCCG    7740

TTGTTTCCTC AATCGCAAgG GCAGGGCGTT TCATGCCAAT TCGACTCGAC ACATAGCCAA    7800

CGCCGTCACG CGTATCCAGA GCCGAGGTCA TAATCACAAC ACCTTTTCCT TGCTCCTCGT    7860
```

```
AGTTATAGGC CACTTTGAGA ATCTCAATCG TTTTACCAGA GTTCATGGTC CCATAACGAT      7920

AGTACAACTG TGCCATGTTT CTTGCTTCAC GTCCATTTCT AAATTTTTGC TACATTCTAG      7980

TATATCATAA TTTTCTTAAG CTTTAAACGG CAAAATGTGG TAAAATAGAA GAAATCAAAA      8040

ACTAGTGGAG GAAGCTATTA TGCCATTTGT ACGCATCGAT TTATTTGAAG GACGCACGCT      8100

CGAGCAAAAG AAAGCTCTTG CTAAGGAAGT AACGGAAGCA GTTGTCCGCA ACACTGGAGC      8160

CCCTCAATCT GCTGTCCATG TCATCATCAA CGACATGCCA GAAGGAACTT ACTTCCCACA      8220

AGGGGAAATG CGTACTAAAT AAGCTAGCTT AAGCAGAATT GCTTAGGCTT TTTCAATCTC      8280

CAAGTAGCAT TCATTGAAGA AATATCCTAA ATTTGTTACA ATTTGAAAAG AAACTTGGAG      8340

AATTTCCAAG AAAAGAGCTA TTAATTAAAG GAAACATTAT GATTACACGT GAATTTGATA      8400

CCATCGCTGC TATCTCTACT CCACTAGGTG AAGGGGCTAT TGGTATTGTC CGCCTGAGCG      8460

gAACAGACAG TTTTGCTATT GCGCAAAAGA TTTTTAAAGG AAAAGACTTG AACAAGGTTG      8520

CCAGCCACAC TCTCAACTAC GGTCACATTA TTGATCCTCT GACTGGTAAA GTCATGGACG      8580

AGGTTATGGT TGGGGCTATG AAGTCTCCAA AGACCTTCAC TCGTGAGGAT ATTATCGAGA      8640

TTAACACCCA CGGTGGGATT GCGGTGACCA ATGAAATTCT CCAGCTAGCT ATTCGTGAAG      8700

GGGCTCGGTT GGCAGAACCT GGTGAATTTA CCAAACGTGC TTTTTTAAAC GGTCGCGTAG      8760

ACTTGACACA GGCAGAGGCT GTGATGGATA TCATCCGTGC CAAGACTGAC AAGGCCATGA      8820

ACATTGCGGT CAAACAATTA GACGGCTCCC TTTCTGACCT CATTAACAAT ACCCGTCAAG      8880

AAATCCTCAA TACACTTGCC CAAGTTGAGG TCAATATCGA CTATCCTGAG TATGACGATG      8940

TTGAGGAAGC CACTACTGCT GTTGTCCGAG AGAAGACAAT GGAGTTTGAG CAATTACTAA      9000

CCAAACTCCT TAGGACAGCA CGTCGTGGTA AAATCCTTCG TGAAGGAATT TCAACGGCTA      9060

TCATTGGACG TCCCAACGTT GGGAAATCAA GCCTTCTCAA CAACCTCTTG CGTGAGGACA      9120

AGGCTATCGT AACAGATATC GCTGGGACAA CACGAGATGT CATCGAAGAG TACGTCAACA      9180

TCAATGGTGT ACCTCTCAAA TTGATTGATA CAGCCGGTAT TCGTGAAACG GATGATATCG      9240

TTGAACAAAT TGGAGTTGAG CGTTCGAAAA AAGCTCTTAA GGAAGCTGAC CTAGTTCTGC      9300

TAGTACTAAA CGCTAGTGAA CCACTAACCG CCCAAGATCG CCAACTCCTA GAAATCAGTC      9360

AGGAGACTAA TCGCATTATT CTTCTTAACA AAACTGACCT GCCTGAAACG ATTGAAACTT      9420

CGGAACTACC TGAAGATGTC ATCCGCATTT CAGTTCTTAA AAATCAAAAC ATCGATAAAA      9480

TCGAAGAGAG AATCAACAAC CTCTTCTTTG AAAATGCTGG TTTGGTTGAG CAAGATGCTA      9540

CCTACTTGTC AAACGCCCGT CACATTTCCT TGATTGAGAA GGCCGTTGAA AGCCTACAAG      9600
```

714

```
CTGTTAACCA AGGTCTTGAA CTAGGGATGC CAGTTGACTT GCTTCAAGTT GACTTGACCC      9660

GTACTTGGGA AATTCTAGGA GAAATCACTG GAGATGCTGC TCCAGATGAA CTCATCACCC      9720

AACTCTTTAG CCAATTCTGT TTAGGAAAAT AAGAAAAATC CATGATCCTT CATTCGGTCA      9780

TGGATTTTAG GTTCTATAAT ATTTGTAGTG GGTAAATCCA CTATAGATAT TATGGAGCCT      9840

ATTTTATTGT AGAAAAAAAG TCCCATATGA CCTATAATGA AAAGCGACAA AACAACTCAT      9900

TAGAAAGAAT CATATGGAAC AATTACATTT TATCACAAAA TTACTAGACA TTAAAGACCC      9960

TAATATCCAG ATTTTAGACA TCATCAATAA GGATACACAC AAGGAAATCA TCGCCAAACT      10020

GGACTACGAC GCCCCATCTT GCCCTGAGTG CGGAAACCAA TTGAAGAAAT ATGACTTTCA      10080

AAAAACCTTC TAAAATTCCT TATCTTGAAA CGACTGGTAT GCCCACTAGA ATTCTCCTTA      10140

GAAAGCGTCG ATTCAAGTGC TATCACTGTT CAAAAATGAT GGTCGCTGAA ACTTCTATCG      10200

TCAAGAAGAA TCACCAAATC CCTCGTATCA TCAACCAAAA GATTGCTCAA AAGTTAATTG      10260

AAAAGATTTC TATGACTGAT ATTGCCCATC AGCTTTCCAT CTCAACTTCA ACTGTTATTC      10320

GTAAGCTCAA TGACTTTCAC TTTAAACATG ATTTTTCTTG TCTTCCTGAG ATTATGTCTT      10380

GGGATGAGTA TGCTTTTACA AAAGGGAAGA T                                     10411
```

(2) INFORMATION FOR SEQ ID NO: 90:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2393 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

```
GTTTTGGGTT CTGGAAATTA TCAGATGGTT GGAAAAGCCG TCCACATCAA GATAGTGTTC      60

GGAGATTTAA GTTTAAATTG AAGAAACTAA CACAGAGGAA ATGGAGTATA GACCTAACAA      120

GACGTATTGA GCAACTGAAT TTGTCTATTC GAGGATGGAT AAACTATTGC TCATTGGGAA      180

ATATGAAAAG TATAGTCGCC AGCATAGATG AGCGCTTGCG TACTCGCCTA CGAGTGATTA      240

TCTGGAAGCA ATGGAAGAAG AAATCGAGAC GATTATGGGG ATTGCTTAAG TTAGGAGTTC      300

CTAAATGGAT AGCAGATAAG GTATCTGGCT GGGGCGACCA TTATCAATTA GTAGCTCAGA      360

AGTCGGTACT TAAACGTGCT ATATCAAAAC CAGTCCTGGA AAAACGTGGA CTGGTTTCGT      420

GTTTGGATTA TTACCTTGAA CGACATGCGT TAAAAGTTAG TTGAACCGCC GTATGCCAAA      480

CGGCACGTAC GGTGGTGTGA GAGGGGCTAG AGATTATCCC CTACTCGATT AACTCCCCTG      540

AAATTTATTT TAATTATGCA AATTTCACGT ATTTTTGATG CTGAGACGAC GATCCTGGGA      600
```

715

```
ACTTTTCAGA TATTTTTTTG ACTATCTAAA TCTATCATTA GAAAAGCTTA GAGCGCCAAA      660

GGATTTGAGC GTTTTTCTGA TTTTTAAGAC TTTTTCCAGT CTCTTTTTCG ATTGAAGATG      720

TAATTATTCT ACTAACTAAC TAACTTCTTA GTACTAGCCA ACAACGATAA TCATAATTCC      780

TCCTAAAATT AGGAATAATA AAGGCAATAG TTTTTGTTTT TTCATGTAAA AAACCTCACT      840

TTTGTTTTCT GCTATTTTAT GCTAAAATAT TAAAAATCAA ATTTAATTCC AAAGTTTGTA      900

ACTAAAGGGG GAGCGCTACA TGTCTAATTC ATTTGTCAAG TTGTTAGTCT CTCAATTATT      960

TGCAAATTTA GCAGATATTT TCTTTAGAGT AACAATCATT GCTAACATAT ACATTATTTC     1020

AAAATCAGTA ATTGCCACAT CACTAGTTCC TATCTTAATA GGAATATCCT CTTTTGTTGC     1080

GAGTCTTTTA GTTCCGTTGG TTACTAAAAG GTTAGCGCTA AATAGGGTTT TATCTTTATC     1140

TCAATTTGGA AAGACTATAT TATTGGCGAT ACTGGTAGGA ATGTTTACCG TAATGCAATC     1200

CGTAGCGCCT TTGGTGACCT ATCTATTTGT TGTTGCAATT TCCATACTAG ATGGTTTTGC     1260

AGCACCCGTT TCCTATGCTA TTGTGCCACG CTATGCGACC GATTTGGGTA AGGCTAATTC     1320

AGCCTTATCA ATGACTGGTG AAGCTGTTCA ATTGATAGGT TGGGGATTAG GTGGACTCTT     1380

GTTTGCAACA ATTGGTCTGT TACCTACCAC GTGTATCAAT TTAGTCTTGT ATATCATTTC     1440

TAGCTTTCTG ATGTTATTTC TTCCTAACGC TGAAGTGGAG GTGTTAGAGT CAGAAACTAA     1500

TCTTGAAATT TTGCTCAAAG GTTGGAAGTT AGTTGCTAGA AATCCTAGAT TAAGACTTTT     1560

TGTATCAGCA AATTTATTGG AAATTTTTTC AAATACGATT TGGGTTTCTT CCATTATACT     1620

TGTTTTTGTA ACGGAGTTAT TAAATAAAAC GGAAAGTTAC TGGGGATATT CTAATACAGC     1680

ATACTCTATT GGTATTATAA TTAGTGGCTT AATTGCTTTT AGGCTATCTG AAAAGTTCCT     1740

TGCTGCTAAA TGGGAACCCC AATTATTCAC CCCAAATCTA AAAACCATCC AGAATCCTTG     1800

CCTTAGCTTA GATCCTGGAT GGTTTCTTTT TTCACCCAAT GGGTGTTTTT TACTAGACAA     1860

AAAAGAGTTT CCCCTTTATG GTATAAGTGT AGAAAAAAAC ACAAAAGAA  AGGAAACTCA     1920

CATGAACAGT TTACCAAATC ATCACTTCCA AAACAAGTCT TTTTACCAAC TATCTTTCGA     1980

TGGAGGTCAT TTAACCCAGT ATGGTGGTCT TATCTTTTTT CAGGAACTTT TTTCCCAGTT     2040

GAAACTAAAA GAGCGGATTT CTAAGTATTT AGTAACGAAT GACCAACGCC GCTACTGTCG     2100

TTATTCGGAT TCAGATATCC TTGTCCAGTT CCTCTTTCAA CTGTTAACAG GTTATGGAAC     2160

GGACTATGCT TGTAAAGAAT TGTCAGCTGA TGCCTACTTT CCAAAATTGT TGGAAGGAGG     2220

GCAGCTTGCT TCACAGCCAA CCTTATCCCG TTTTCTTTCC AGAACTGACG AGGAAACAGT     2280

CCATAGTTTG CGATGCCTCA ACCTTGAATT GGTCGAATTC TTTTTACAGT TTCACCAGCT     2340
```

716
AAACCAACTC ATTGTAGATA ACGATTCTAC CCATTTCACA ACTTATGGCA AGC   2393

(2) INFORMATION FOR SEQ ID NO: 91:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 4762 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

```
TTTGTATCTT TTTAGGTCTC TTTCAATCCA AACCCTTTAA ACTATACGTC ATTTCGGTTC      60

CTGCAAGTCT TGTGGTAATT TTAGGTTTGA TTTTACTTTT CTTTTCACAA GAGCCTCTGC     120

ACGCTTCTTA TTTGATGGTC GTCTTCCCTG TTTTCCTACT TTTATTGGTA ACCAATATTA     180

AGAGTCAACA GAGGGGGCGT AGTGCTAGAA GAAGCCGAAG AGAAACGCCA TTATGCCTAT     240

GGAGTCGTTT CTTCAAAGGA AATCTATATC TGCTAGTTTT TGGGTTTGTC TATCTTTTGT     300

CTGTTCCTTT TTTGATGAAG TTTGTCCTTT ATCCAGTACC TTATCAAGAA CGTAATCGTC     360

TTGCTGATTT GGTAAAAGAG GAGACAAATA CGGAAGATGC TATCTCATGC ATGGATGAT      420

ACTGCGACTC TTTATCGTAA GAGTGAGCGC TTGTCCCATC GGCGATTTTG TCCCCGTTGC     480

ACTATACAGC AACTGAGGAA AATCGTAATA AGTTACTTAA TGACTTGAAA GAAAAACAAC     540

CTAAGGTGAT TGTGGTAAAT GATAAGGTGG TAGTCTGGTC TGAAGTGGAA ACACTCTTAA     600

AAGAAAATTA CCAACAAGTA AAGACTGATT ACTCAGAGTT TAAAGTCTAT AAAATTAAAT     660

AACCAAATCA ATATCTTGTG TATTTTTAAA AATTTTAGGA TTTTTAACAC AAGATATTGA     720

TTTTTCTTTT TAGAGTGGTA TAATACTTTT TAGAAAGAAC ATTTTAGAAA AGAGCATGCA     780

TATGATTGCA CTAGAAGAAA AAATTACAAT TTTGCCAACT CTCTTCGTCG AGAAACGAGA     840

TGGGAGACGT GTTGTATTTG ATGTGGACAA GATTGACAAG GCTCTCCACA AGGCGGCTGA     900

CAAGGTTATG GATGTGACAC CCCTGGTTGA AAAATGCCTC AATGATCTGA CTGAGCGAAT     960

TATTACAGAA ATTCATAGTC GCTTTCCACA GGGAATTAAG ATTTACGAAA TTCAAAAATAT   1020

CGTAGAACAT GAACTCCTTG AAGCCAAAGA ATATGCGCTG GCTGAGGAGT ATATTACTTA    1080

TCGGACACAG AGGGATTTTG AGCGCTCAAA AGCGACGGAT ATCAACTTTA GTATTCATAA    1140

ACTTCTCAAC AAAGACCAGA CAGTTGTCAA TGAAAACGCT AATAAAGACA GTGATGTCTT    1200

TAACACTCAG CGTGATTTGA CAGCAGGGAT TGTTGGGAAA TCAATCGGAC TGCAAATGCT    1260

TCCTAAGCAC GTAGCCAATG CCCACCAAAA GGGGGATATC CACTATCACG ATTTGGACTA    1320

CAGTCCCTAT ACCCCTATGA CCAACTGCTG TTTGATTGAT TTTAAGGGTA TGTTGGAAAA    1380
```

717

```
TGGTTTTAAG ATTGGAAATG CAGAGGTAGA GAGTCCCAAG TCTATCCAGA CTGCGACAGC      1440

ACAGATTTCT CAAATCATTG CCAACGTTGC TTCTAGCCAG TACGGTGGCT GTTCAGCTGA      1500

CCGTATCGAT GAAATTTTGG CGCCTTATGC AGAGAAGAAT TATCAAAAAC ATCTCAAAGA      1560

TGCAGAAGAG TGGGTATTGC CTGAAAAACA GGAAGATTAC GCTTGGAAGA AAGCGCAAAA      1620

GGACATCTAC GATGCCATGC AATCTCTTGA GTATGAAATC AATACTCTCT TCACTTCAAA      1680

TGGACAAACA CCTTTTACTT CGTTAGGTTT TGGTCTGGGA ACCAGTCGTT TTGAACGAGA      1740

AATTCAAAAA GCTATTTTAA ACATTCGCAT CAAGGGTCTT GGTTCAGAAC ACCGTACGGC      1800

TATCTTTCCT AAACTTATCT TTACGCTTAA AAGAGGCCTC AACTTAGAGG AAGGAACTCC      1860

CAACTATGAC ATCAAGCAGT TGGCTCTAGA GTGTGCAACC AAGCGGATGT ATCCAGACGT      1920

CTTGTCTTAT GATAAGATTG TTGATTTGAC AGGTTCTTTC AAGGTGCCTA TGGGCTGCCG      1980

TTCTTTCCTT CAAGGGTGGA AGGATGAAAA TGGTGTAGAA GTCAATTCAG GTCGCATGAA      2040

TCTGGGTGTT GTGACGGTTA ATCTGCCTCG TATTGCTCTT GAGTCTGAAG GTGATATGAA      2100

TAAGTTCTGG GAAATCTTCA ACGAGCGAAT GAATATCGCA GAAGATGCTC TTGTTTACCG      2160

TGTCGAACGC ACTAAAGAGG CGACACCAGC GAATGCTCCT ATTCTTTATC AGTACGGTGC      2220

TTTTGGCCAT CGTCTAGGTA AAGAAGAAAG TGTTGACCAG CTCTTTAAGA ATCGTCGTGC      2280

GACCGTTTCG CTGGGCTATA TCGGCTTGTA TGAAGTAGCG ACAGTTTTCT TTGGTAACAG      2340

CTGGGAAAGT AATCCAGATG CTAAGGAATT CACGCTAGAC ATCATTCACG ATATCAAACG      2400

CCGTGTAGAA GAGTGGTCAG ACCAATATGG CTACCATTTC TCTATCTACT CAACACCATC      2460

CGAAAGTCTG ACAGACCGTT TCTGCCGACT AGATATAGAC AAGTTTGGCT CTATTCCTGA      2520

TATCACAGAC AAGGAATACT ACACCAACTC TTTCCACTAC GATGTTCGTA AAAATCCAAC      2580

ACCGTTTGAA AAATTGGACT TTGAGAAAGT CTATCCGGAA GCAGGTGCGT CAGGTGGTTT      2640

CATCCATTAT TGTGAGTATC CAGTCCTTCA GCAAAATCCA AAGGCCTTGG AAGCTGTCTG      2700

GGATTATGCT TATGACCGTG TAGGCTATCT AGGCACCAAT ACTCCGATTG ACCGTTGCTA      2760

CAAGTGTGAC TTTGAAGGGG ATTTTGAACC AACTGAGAGA GGGTTTGCTT GTCCAAACTG      2820

TGGCAATAGC GACCCTAAAA CAGTAGATGT GGTGAAACGA ACTTGTGGCT ACCTAGGTAA      2880

TCCTCAAGCA AGACCGATGG TCAACGGGCG TCACAAGGAA ATCGCTGCGC GTGTCAAACA      2940

TATGAATGGT TCAACGATTA AAATAGCTGG GCATCAAGTA ACAAATTAGA AAGAAATGAA      3000

ATGGGAAAAT ATCAACTAGA CGATAAGGGG CGCGCACAAG TGACCCGTTA TCACGAGAAA      3060

CACTCTAAAG GTGGAGCTGG TAAGAAAGAA CGCTTGCTTA GCTTCAGAGA ACAATTTTTA      3120
```

718

```
AACAAGAACA AGAAAAAATA AAAGTGAGAG CCAGCTCTCG CTTTTCTCAT AGTGGGAGGT    3180

AAGGATGGAA TTACGCAGAC CAAGATTAGC GGATAAGAAA GCTGTTTTAG ATATGATGAC    3240

AGAGTTTGAA AAATTTCAGT CGCCTCACGA CGGCGGTTTC TGGGATACAG AGAACTTTGT    3300

GTATGAAGAC TGGTTAGAAA GCAATCAGGA ACAGGAAATG GGGATTAATC TGCCTGAAGG    3360

ATGGGTTTCT GCAATTCAGT TAGTGGCTTT TTCTGAGAAA GGTCAAGCAG TTGGATTTCT    3420

TAATCTCCGG TTGCGCCTCA GTAACTTTCT ACTAGAAGAA GGTGGCCACA TTGGCTACTC    3480

CATTCGTCCA TCTGAAAGAG GCAAGGGTTA TGCAAAAGAG ACTCTCCGTC AGGGCTTGCA    3540

AGTTGCTAAG GAAAAGAACA TCAAGAAAGC TCTGGTGACC TGTAGTGTGA ATAATCCTGC    3600

TAGCAGAGCA GTCATTCTAG CAAATGGTGG AATATTTGAG GATGCTCGCA ATGGAGTCGA    3660

GCGTTATTGG ATAGAGGTAG CGAATGAATA ATCCAAAACC ACAAGAATGG AAAAGCGAGG    3720

AACTTAGTCA AGGTCGTATC ATTGACTACA AGGCCTTTAA CTTTGTGGAC GGCGAAGGCG    3780

TGCGCAACTC TCTCTATGTA TCAGGCTGTA TGTTTCACTG CGAGGGATGT TATAATGTTG    3840

CGACTTGGTC TTTTAATGCT GGCATTCCCT ATACAGCAGA ATTAGAAGAG CAGATTATGG    3900

CAGACCTTGC CCAACCCTAT GTTCAAGGCT TGACTTTGCT GGGAGGGGAG CCTTTTCTCA    3960

ATACTGGGAT TCTCTTGCCA CTTGTTAAGC GGATTCGGAA GGAATTGCCA GACAAGGACA    4020

TCTGGTCCTG GACCGGCTAC ACTTGGGAAG AAATGATGTT GGAAACTCCA GATAAACTGG    4080

AATTCTTGTC ACTGATTGAC ATTCTTGTCG ATGGAAGATA TGATCGAACT AAGAGAAATC    4140

TTATGCTCCA GTTTCGAGGT TCATCTAACC AACGAATTAT CGATGTGCAA AAATCGCTCA    4200

AAAGTGGGCA AGTAGTGATT TGGGACAAGC TCAATGACGG AAAAGAAAGC TATGAACAGG    4260

TGAAGAGAGA ATGAAGAAAA AGGACTTAGT AGACCAACTA GTCTCAGAGA TCGAGACGGG    4320

GAAAGTCAGG ACACTGGGAA TATACGGTCA TGGAGCTTCA GGTAAATCAA CCTTTGCACA    4380

GGAATTGTAC CAAGCTTTAG ATTCTACTAC AGTAAATTTG CTAGAGACAG ATCCTTATAT    4440

CACCTCAGGA CGCCATCTGG TAGTACCCAA GGACGCGCCG AATCAAAAGG TGACAGCCAG    4500

TCTGCCAGTG GCGCATGAAC TGGAGAGTTT GCAGAGAGAT ATCCTTGCTT GCAGGCGGGT    4560

ATGGATGTCT TGACAATTGA AGAACCTTGG AAGGCTAGTG AGGTCTTGTC TGGAGCCAAA    4620

CCAATTTTGA TTGTCGAAGG GATGTCTGTT GGCTTTCTAC CCAAGGAACT CTTTGAAAAA    4680

ACCATCTGTT TCTACACGGA TGAGGAGACC GAATTAAAGC GACGCCTTGC TAGAGATACG    4740

ACTGTGAGAA ATCGCGATGC GG                                            4762
```

(2) INFORMATION FOR SEQ ID NO: 92:

    (i) SEQUENCE CHARACTERISTICS:

719

```
(A) LENGTH: 3832 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

```
GATGCAGGTT TCGACCCACA TATTCCAGAA AATTACTTTA AAGATGATGA TGTTAATCAG        60

GTACCTTGTC TTTGTTGGTC TTCATCTGCA GCCCTCTTTT TCAGTAATTG GGTAGACCAT       120

GCGGTCTATC AGGAGACGCC TTTTGATTGG AGAAAGATAG AAGATGATGC ATCTGCATAT       180

GGGTATTTAT AAGAGGAATT ATGACATATT TAGACGCTTT TAAATCAGGT ACCTTGGTTT       240

TACCGAGTGC CCTGCTCTTG CATTTTAAGG AACTCTTTCC TTCTAGCGAC GATTTTCTGG       300

TTTGGCAATT TTTCTATTTG CAAAATACGA CAGGCTTAGA AGAAATGTCG CCAAGCCAGA       360

TTGCTGAAAG GATTGGCAAG GAAATTTCGG ATGTCAACCA GTCCATTTCT AATCTGACGG       420

AAAGGGGACT GCTCCAGTAT CGTACTATCG AATTAAATGG CGAAATTGAA TTGCTCTTTG       480

ATGCTAGTTT GGCCTTGGAA CGTTTGGATG ACCTGTTTGG AGCAGTTCAT TCAAGTTCAG       540

ACCAGCTAAC ACCTCAAAAC CAGCTCAAGG ATTTGGTGGA AACCTTCCAG CAGGAGTTGG       600

GACGATTGTT GACGCCTTTT GAGATTGAGG ATTTGACCAA GACACTAAAG GAAGATGGAA       660

CCAGTGCTGA CTTGATTAAG GAGGCTCTTC GTGAAGCTGT TTTGAATGGA AAACCAAACT       720

GGAAGTACAT TCAGGCGATT TTGAGAAACT GGCGCCATGA AGGAATCAAG AGTCTCGCTC       760

AAATTGAGGC CAAGAGAGCA GAAAGAGAAG CAAGCAATCC TCAGTTGACA CAGGTATCTG       840

CAGATTTCAT AAATGCCATG GATCTCTGGA AGGATTAATC CATGCAAGTA GGCTTGAAAT       900

CCGAGTAAGA TTTGCAAGCT GTGTATAATT GTGATAGAAT AAATAGAAAA TAAATTGAAA       960

AAAGAGGTAT GTGAAATGTC ACGTAAACCA TTTATCGCTG GTAACTGGAA AATGAACAAA      1020

AATCCAGAAG AAGCTAAAGC ATTCGTTGAA GCAGTTGCAT CAAAACTTCC TTCATCAGAT      1080

CTTGTTGAAG CAGGTATCGC TGCTCCAGCT CTTGATTTGA CAACTGTTCT TGCTGTTGCA      1140

AAAGGCTCAA ACCTTAAAGT TGCTGCTCAA AACTGCTACT TTGAAAATGC AGGTGCTTTC      1200

ACTGGTGAAA CTAGCCCACA AGTTTTGAAA GAAATCGGTA CTGACTACGT TGTTATCGGT      1260

CACTCAGAAC GCCGTGACTA CTTCCATGAA ACTGATGAAG ATATCAACAA AAAAGCAAAA      1320

GCAATCTTTG CGAACGGTAT GCTTCCAATC ATCTGTTGTG GTGAATCACT TGAAACTTAC      1380

GAAGCTGGTA AAGCTGCTGA ATTCGTAGGT GCTCAAGTAT CTGCTGCATT GGCTGGATTG      1440

ACTGCTGAAC AAGTTGCTGC CTCAGTTATC GCTTATGAGC CAATCTGGGC TATCGGTACT      1500
```

```
                                720
GGTAAATCAG CTTCACAAGA CGATGCACAA AAAATGTGTA AAGTTGTTCG TGACGTTGTA     1560

GCTGCTGACT TTGGTCAAGA AGTCGCAGAC AAAGTTCGTG TTCAATACGG TGGTTCTGTT     1620

AAACCTGAAA ATGTTGCTTC ATACATGGCT TGCCCAGACG TTGACGGTGC CCTTGTAGGT     1680

GGTGCGTCAC TTGAAGCTGA AAGCTTCTTG GCTTTGCTTG ACTTTGTAAA ATAATCAGTA     1740

AGTAGCAAAA GCTAGGTGGA ACAGCATTCA GATGTCTGTT ACATTTTTTA TAGGAGAGAA     1800

AGATTGAAAA CAAAAATTGG ATTAGCAAGT ATCTGTTTAC TAGGCTTGGC AACTAGTCAT     1860

GTCGCTGCAA ATGAAACTGA AGTAGCAAAA ACTTCGCAGG ATACAACGAC AGCTTCAAGT     1920

AGTTCAGAGC AAAATCAGTC TTCTAATAAA ACGCAAACGA GCGCAGAAGT ACAGACTAAT     1980

GCTGCTGCCC ACTGGGATGG GGATTATTAT GTAAAGGATG ATGGTTCTAA AGCTCAAAGT     2040

GAATGGATTT TTGACAACTA CTATAAGGCT TGGTTTTATA TTAATTCAGA TGGTCGTTAC     2100

TCGCAGAATG AATGGCATGG AAATTACTAC CTGAAATCAG GTGGATATAT GGCCCAAAAC     2160

GAGTGGATCT ATGACAGTAA TTACAAGAGT TGGTTTTATC TCAAGTCAGA TGGGGCTTAT     2220

GCTCATCAAG AATGGCAATT GATTGGAAAT AAGTGGTACT ACTTCAAGAA GTGGGGTTAC     2280

ATGGCTAAAA GCCAATGGCA AGGAAGTTAT TTCTTGAATG GTCAAGGAGC TATGATGCAA     2340

AATGAATGGC TCTATGATCC AGCCTATTCT GCTTATTTTT ATCTAAAATC CGATGGAACT     2400

TATGCTAACC AAGAGTGGCA AAAAGTGGGC GGCAAATGGT ACTATTTCAA GAAGTGGGGC     2460

TATATGGCTC GGAATGAGTG GCAAGGCAAC TACTATTTGA CTGGAAGTGG TGCCATGGCG     2520

ACTGACGAAG TGATTATGGA TGGTACTCGC TATATCTTTG CGGCCTCTGG TGAGCTCAAA     2580

GAAAAAAAAG ATTTGAATGT CGGCTGGGTT CACAGAGATG GTAAGCGCTA TTTCTTTAAT     2640

AATAGAGAAG AACAAGTGGG AACCGAACAT GCTAAGAAAG TCATTGATAT TAGTGAGCAC     2700

AATGGTCGTA TCAATGATTG GAAAAAGGTT ATTGATGAGA ACGAAGTGGA TGGTGTCATT     2760

GTTCGTCTAG GTTATAGCGG TAAAGAAGAC AAGGAATTGG CGCATAACAT TAAGGAGTTA     2820

AACCGTCTGG GAATTCCTTA TGGTGTCTAT CTCTATACCT ATGCTGAAAA TGAGACCGAT     2880

GCTGAGAGTG ACGCTAAACA GACCATTGAA CTTATAAAGA AATACAATAT GAACCTGTCT     2940

TACCCTATCT ATTATGATGT TGAGAATTGG GAATATGTAA ATAAGAGCAA GAGAGCTCCA     3000

AGTGATACAG GCACTTGGGT TAAAATCATC AACAAGTACA TGGACACGAT GAAGCAGGCG     3060

GGTTATCAAA ATGTGTATGT CTATAGCTAT CGTAGTTTAT TACAGACGCG TTTAAAACAC     3120

CCAGATATTT TAAAACATGT AAACTGGGTA GCGGCCTATA CGAATGCTTT AGAATGGGAA     3180

AACCCTCATT ATTCAGGAAA AAAAGGTTGG CAATATACCT CTTCTGAATA CATGAAAGGA     3240

ATCCAAGGGC GCGTAGATGT CAGCGTTTGG TATTAAGCGA TGATTTGAAA GAGGGATGTG     3300
```

721

```
ATAGTAGCAC CCTCTTTTTC TTTGTTTTAT GATAGTTCAT CCTCGAGTAA ATTCAAGTTC    3360

TTGCTCGGAA ATGAAGCTTA TATAGTAGAT TGAATATAGA CAAATACCTT GTGATTGGTA    3420

AAACATTTTA GAAATTCATT TACCTTTCCT AATCGACTTG GTTTCATCTT ATTTCAATCT    3480

ATTATAGTAT TGGGGAATTT CTTCAAACCA CATCAGCTTG GTCAGTTCTA CCTGCGACCT    3540

CAAAACTTGT GCTTTGGTCA AGCTGGGTTT AGTTTCCTAG TTTGCTGATG GATTTCCATT    3600

GACTATAAGC ATCCAACCCT CTTTTTGTCT TCTAAAGAAT TCTTAAATTA TCAGTCTATT    3660

GCAACTTTTC TCATATAAGT TCTTTGTCTT GCTATTGGTT TTCCTTAGTA GTATACTAAG    3720

GTAGTAATCA TTAAGAAGTG GTTACAAAAA ATAATGAATG AGGTAAAGAA AATGGTAGAA    3780

TTGAAAAAAG AAGCAGTAAA AGACGTAACA TCATTGACAA AAGCAGCGCC GG            3832
```

(2) INFORMATION FOR SEQ ID NO: 93:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 10690 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

```
TGAAAAAATC CTCATGAACC TGGCGCCAAT AGACAAGTGT CTTGTTTCCC TCACCTTCCT     60

TATAGGCATG GTCAGCTGAC ACTCGATTGA AGGGTTTAAC AGAAACCTTT GTAATTTCGA    120

CAATGCAGAC AGCCTGATTT TGACTATCTA AAATGACATC GAAGGTCCCT ACTTGGGGAA    180

GTGGTTCGTC TTCTAGCACA TAGAGGTCAT AGGCTGATGC TGTTGCTGTC TTTTCTCCTT    240

TAAACACCAA ATCCGCTAAA AGGTCTGGTT CAACTCCAAA AGCCCAGGCA TCGATTTCAT    300

CTCCGATCAA AGGATTGATT TGCTTGTATT TATTCCACAT TTCTTGCGGT ATCATGGGTG    360

CTCCTTTGTA ATTTTTTACT TTCTTCTTTT ATGTGTTTAA GATGATCTGG ATGGTCAATC    420

TCTAAATCAA AAATCTCTGG AATAGAACTG TAGTGGATAA TGCACTTGAT ACCCAACTGA    480

TTCATTTTTT GTATGAAAGA AGTATTCAGA TAGCCTGCTA CAGCAAAATC AATCTTGTTC    540

TTTCTTGCTT TATCCTGCAT ATCTCTTAGC ATATCTAACA TTATTGGACT TTCCATATCA    600

TGCCATTGAC TGTTTCTCAT AGTCGCAAAA ACAAAGGAAG TCAAATCATT CATTCCAACT    660

ACAATCTTTG AAATGCCCGT TTCCAGTATA CTAGATAAGT CAAAATACGC TGACGGTAAT    720

TCAATCATCG TTCCGACTTT CCCAGTAAAA CCCTGCTGAC GCAATACTGT AATAGCTTGT    780

TTTAATTGGT CGGCATCATT GACAAAAGGA AAGATAACAG ATAGATTGGG GTTGGTTTGA    840
```

722

```
TAAACTTCTG TAACGACATG TGCTTCAGCC TGAAATTCAT CCAAACACGC CAGTAAACGC        900

CTAGTTCCTC TATAGCCAAA CAAGGGATGC CCTTCGTCAA AAAACTCTTT AGTCCCCACT        960

AAACAATTGG CTTCTGTATT CGTTAATTCA GTAAAACGAT ACCAAACTTC CTTACCTAAG        1020

TAAAAGGAGC AAATAGTATC AAGATAATCT TTCACAAATT CCTGACAACT TTGTAATAGT        1080

ATATTTTGAT TGAGCTCTCT CAATAAGTAT TCCCCACGAA TCATGCCGAC GTGGTGAAAT        1140

AGTTGAGGAT AAATTTTTTC AAGAATTTTT TCGCCACTAA GGGCAAGTTG ATTTCTCATC        1200

ATTCACCTTC CAATTCATGT AAGAAGTCTT GTCCAGTTCT GGAAATCCTA ATAATTCAGA        1260

CTTAACCTTC AAGACTAATG GCGATGCATT TTCTTCTGTA ATCTCTTGAA TATCCATCCA        1320

AATATATCCA AGTGAATCAT TCGCACCATC AGACACAGCT TCCGAAATCG TAACTTGAGG        1380

TGCACTCTCA TTCATTTCAA CATCATACAA GGCTATGACA TGGTGAACCA TAAAATTTTT        1440

TAACTCTTCC CTGACGAAAA CATCGTAGAT TCGAGGATTA GAGTAGCTTC TAACAGTAAA        1500

TCCCGTCTCT TCCATAACTT CTCTAGTCAG CGTTTCCGTC AGTCCTTCAC CAAGTTGCTG        1560

ACTGCCTCCA GGTAGATCAT ACCGATGTTG ATAAGGGCCT CTCGTTTTTT CAATGCAAAG        1620

TAACTTTCCA TTTTCAAAGC AAACACAGTA GACCCCAAAG TGATTTTTGA TTTCCATCCA        1680

ACTCCTCCTA CTTCAAAGAC CAGCCACCAT CTATTGTCAA GATTTGTCCT TGCATGGCGC        1740

TCGCTTTTCC ACTTGCTAAA AAAAGACTAA GCTCTGCTAT TTCCTCTGGC TCAATCCAGC        1800

GCTTGATTGG GGTTTCACTA GCCACCCAGT CAGCCAAACC ACCTGGTTCA AAATCCGCAG        1860

CGGTCATAGC TGTCTTGACT GCTCCTGGAG CGATACCAAA GACCTGAATC CCAGCTTCAG        1920

CATAGTCTAG AGCCAACTGC TTGGTGAAGC CAGCCAAGGC ATGCTTGGAT GAAGTATAGG        1980

CGTGACCACC TCCACCTGCT AGGCTAGAAG CAATGGAACA CATATTGATG ATGATTCCCT        2040

TTTTATTTTC CAGCATTTGT GTCAAATAAT ACCGAGTCAA CTCTACTGGA ATAATGTAGT        2100

TGATTTCAAA AATCTCTTGA ATGTCCTGCG CCGTTTGTTC CAACAGTGGT TTGTAATCAT        2160

CCAAAACTCC AGCAGTATTA CACAAAACAT CCACCTGAGG GCACCAGTCA AAAATAGGTT        2220

CCAAGTCCAA GGTCAAATCT CTCTGTAAAA AGCGAAAATC ACCCTCTAAG AGTGGCTTTT        2280

CACCTTGGTC AACTCCATAA ACTTGATAGC CCTTCTCTAA AAAGAGGCGA GCTTGAGCCA        2340

ATCCGATCCC TGAACTCACT CCTGTAATGA GTACACGTTT AGTCATGCAC TTCTACCCAA        2400

TCCGTTGCCA AAACATCACA AACTGTCGGG CTCCACATGG AAAAACCTTC TCCTTCGCCA        2460

GAAACGTTGA TTAGGAAATA AGGTGTCATT TCAAGTGCAA GCCCATTTTG CTCGATGGTA        2520

TCAAAGAGTT GGACATAGTT TTCCGCACCT CCCCAACCAG TTCGTACATA TTTTCTCTTA        2580

GCCTTTAACC CAGGCAGGAT CTCTTCAAAT GTCATGTTTT TCTCCTTTAA TTCTACATTC        2640
```

723

```
TTCATTTAAT TATAGCAAAA AACCGCTTTA TACGGCTTTT TGAATGTGAG TTATTCAAAC      2700

CTGCTACTAC TTACGGCAAA TTATTCCCTG CAGCAAGATA AATTTCATAC CATTCTTTTC      2760

TTGTTAAGCT AAAGTTTGCC GCTCGGCTAA CTTCTCTCAA GTGCTTAGGA TTTGTTGTAC      2820

CTACGACTGC CTGCATTTTT GCTGGATAAC GCAATATCCA AGAAATGGCA ATAGTTGAAG      2880

AGGTTACTCC ATATTTAATA GCTAAACGAT CAAGTACTTG ATTTAAAGCT TGAAATTTCT      2940

CATTTCCAAC AAAATTCCCT TTAAAATACC CGAATTGTAA GACAGACCAT GCTTGAATGA      3000

CCACATCGTG TAATTGGCAA TATTCAAAAA TGCTGCCATC TCGCATAGCT GCTTGACTAT      3060

CTTCCATATT AACATGAAAA GCTGATTCAA ATCCTGGAGT AAAAGCCGCA CTCAATTGTA      3120

GCTGATTAAC AGCTAACGGC TGCTTGACAT CTTTTTTAAG CAACTCCATC ATCATAGGAT      3180

TTTGATTAGA AACTCCAAAA TCTCGAACTT TACCTTGTTT ATAAAGGAGA TTAAAGGCTT      3240

CTGCTACTTG GTCAGATTCC ATCAAAGCAT CTGGTCGATG AAGGAGCAAG CTATCTAGAT      3300

GATCAATCTT CAATCTTTGC AAAATACCGT CTACTGATTT TATAATATAG TCCTTAGAAA      3360

AATCAAAATA GGTAAATTCT TCAATGCGAA TGCCACATTT GGACTGAATC CACATCTTTT      3420

CTCTTAAATC TGGACGATTT TTTAGGACAA GACCTAACAG TTCTTCACAA CGACCACGAC      3480

CATAAATATC AGCCAAGTCG AAGGCATTGA TTCCAACAGA AAGTGCTGTT TCTACAAGCT      3540

CTTCAACTTC TTTTACAGAT TTATCTTTTA TTCTCATCAT TCCGAGAACA ATTTCTGATA      3600

ATTCTTTGTC ATCTTGACCA AGAGTTATGT ATCTCATCAA ATTTTTCTCC TTTAATTTCT      3660

AACATTCTTC CCTTCATTAT AACAAAAAAC CGCTTTGCAA CGACTTTTTG ACTATACTTC      3720

ACTCCATTTT ATCTTCTTAA ACCCACGGAA CAAGACAAAG ATTCCAATAA AGAGGACAGC      3780

TAAAGGAATA ACTTTTGTAA GGAAAACATT TGAAATTCCC ATCCACTCAT AATAACGGAG      3840

CAGAGAACCC ACCACAAGAT GGGCAATAAT CATACTGACA AATGGACGAA AGACCGCTTC      3900

TTTCCAATTC CAAATACCGA TAACTAGCGA AATCGTAAAG ACAGACAAAC TATCCCAGGG      3960

AGCCGGAATA TAAAAGGCTC CTTCTTGTAT GAAGCTTGCC ATTCCTACAT ATCCTAAAAC      4020

AACTAGAAGA ACTATAGTCC CAACAACAAT GTAAGTGCCA ATTTTCATTT TAGGAGAATC      4080

TTGGACTAAA CTTCTTCGTA AAATTGTGGC CACAAGTCCA AATCCAATCA GAAAAATAAG      4140

AAGTTGCCCT AAAAATGTGA GCAAATTGAC TGTTAAGAGA GGACCTTTAG AAAAATCACT      4200

TAGTAGTTGA TAATAACGTA ATACCGCCAG GACAAGAATT GGCGTCAAAA GGGACTCTTT      4260

GATAGAACTG CGAGGTGCTC CCTTGAGAAT CTCTTTCATT ATTTTTTTAG GATTCTTACC      4320

TAGATAATCC TCTGCACTCA TGCCATCTCG TTCTGCTTCT GAGAAATCTA GCATCATCAA      4380
```

724

```
ATAGATCTGC TCTCTGAGAT AGTCTTCATC ATAGAGAAAT CCAGCAAGAT TAAAACTTTC      4440

CCACAACTCC TCAAAATACT TTTGATTCTC CTCAGAAAAC TCATGTAGCA AAGCGCTTGT      4500

TTCTTCGTAA TACTTCATTT TCTTCATGGT TTAACCCCCA TTCTTAATCC CTTCTACTTT      4560

TTGACTCAAA TCGTCCCATT GTTGCCAAAA GACTGAGACA CGCTCTTCTC CTTCTTTCAT      4620

TAATGAAAAA TACTTCCGAT CTGGACCATC TGGCGACGGG CGCATGTCGC CTCTTATCCA      4680

TTGATTTTTT TCTAACTTTT GCAACAAAGG ATAAATAGTT CCTGGAACGA TAGTATCAAA      4740

TCCAGCCTCT CGCAAAGTCT GAACCAACTC ATAACCATAC CGCTCTTTTT GACCAATCAT      4800

ATCCAAGACA CAACCTTCAA GAACACCTTT TAATAGCTGA GTTTCTTTCA TCACTTCTCC      4860

CTTCTAATCT ATTTTGTAAT ACCTACTAGT GACTTCACCT ATAGTATATC ACTTCTACAC      4920

TAGTTTGTAA AGCATAATAG TTAATACTCT TCGAAAATCT CTTCAAACCA CGTCAGCGTC      4980

GCCCTACCGT ATGTATGGTT ACTGACTTCG TCAGTTTCAT CTACAACCTC AAAAACATGT      5040

TTTGAGCTGA CTTCGTCAGT TTCATCTACA ACCTCAAAAC AGTGTTTTGA GCTGACTTCG      5100

TCAGTTTCAT CTACAACCTC AAAACAGTGT TTTGAGCTGA CTTCGTCAGT TTCATCTACA      5160

ACCTCAAAAA CATGTTTTGA GCTGACTTCG TCAGTTTCGT CTACAACCTC AAAACAGTGT      5220

TTTGAGCAAC CTGCGGCTAG CTTCCTAGTT TGCTCTTTGA TTTTCATTGA GTATAAATAA      5280

AAAAACAGAA CTAGCCTGAA CTAGTCCTGT CTACTTTTAC CCAATCACAC TTCCATTTGG      5340

TACAGCTGGA TCAACTGTGA GAAGGGTTAA TTTGCCATCA TGTTCAGCTG AGAGAATCAT      5400

ACCCTGGCTG ACATATTTTT TCATCATTTT ACGTGGTTTG AGGTTAGCAA CGATTTGAAC      5460

TTTCTTGCCG ACCAATTCTT GTTCATTTGG ATAGTATTTT GCAATTCCTG AAAGAATCTG      5520

ACGATCTTCT CCATCACCAG CATCCAAGCG GAATTGAAGC AACTTATCTG AACCTTCTAC      5580

TTTAGACACT TCTTTGACTT CTGCGACACG GATTTCAACC TTGTCAAAGT CTTCAAACTT      5640

GATTTCATCC TTGTTTAGTT TGAGCTCAAC TTCGTCCGGA TTCCATTCTT TTTCGACTGC      5700

TGGTTTATTG CCTTCCATTT GTTCCTTGAT ATAGGCGATT TCTTCTTCCA TATTTAGACG      5760

TGGAAAGATA GGTGTTCCTT TGGCAACTAC AGTCACATCT GCTGGGAAGT CAGCCAAACT      5820

CAAGTTTTCA AGACTAGAAA CTTCTTCCAA ACCAAGTTGA GTCAAAACTG CACGACTAGT      5880

TTCCATCATA AATGGTTCAA TCAAGTGAGC AACTACACGA ATGCTGGCTG CCAAGTGGCT      5940

CATGACACTT GCCAATTGGT CACGAAGAGC TTCATCCTTG GCCAAGACCC ATGGTGCGGT      6000

CTCATCGATG TATTTATTGG TACGAGAGAT CAGAGTCCAG ACTGCTTCAA GCGCACGTGG      6060

ATAGTCAACT GCTTCCATGT GTGTATGGAA GTCTGCGATT GATTGTwCTG CAACCTCAGC      6120

AAGAACATGA TCATATTCAG TCACACCTTC TACATAGGCA GGGATTTGTC CATCAAAGTA      6180
```

725

```
CTTATTAATC ATGGAAACCG TACGGTTAAG GAGGTTCCCA AGGTCATTAG CCAATTCATA        6240

GTTGATACGG CCGACATAGT CTTCAGGAGT AAAGGTTCCG TCTGAACCAA CTGGAAGGTT        6300

ACGCATGAGG TAGTAACGAA GTGGATCTAG TCCATAACGC TCTACCAACA TTTCAGGGTA        6360

AACGACATTC CCTTTTGACT TAGACATTTT TCCGTCTTTC ATGACAAACC AACCATGGGC        6420

AATCAAACGA TCAGGTAATT TAACATCCAA CATCATAAGA AGGATTGGCC AGTAGATAGA        6480

GTGGAAGCGA AGGATATCTT TTCCTACCAT ATGGAAGACT GTTCCATTCC AGAACTTGTC        6540

AAAGTTACCA TGTTCGTCTT GAGCGTAGCC AAGAGCTGTC GCATAGTTAA GAAGGGCATC        6600

AATCCAAACG TAGACAACGT GTTTTGGATT TGATGGGACA GGCACTCCCC ATGTAAAGGT        6660

TGTACGAGAT ACCGCCAAAT CTTCCAAGCC TGGCTCGATG AAGTTGCGTA GCATTTCATT        6720

AAGGCGACCA TCTGGCGTGA TAAATTCAGG ATGAGCTTTG AAAAATTCGA CCAAACGGTC        6780

TTGGTATTTG CTAAGGCGAA GGAAGTATGA TTCTTCAGAA AcCCATTCAA CCTCATGACC        6840

TGATGGAGCA ATACCACCAG TCACATTTCC AGCTTCATCA CGGAAAACTT CTGCCAGCTG        6900

GCTTTCTGTA AAGAATTCTT CGTCTGATAC TGAATACCAA CCAGAGTATT CACCCAAGTA        6960

GATATCATCT TGAGCAAGTA AGCGTTCAAA GACTTGTGCG ACAACTTTTT CATGGTAGTC        7020

ATCAGTTGTA CGGATAAATT TATCGTATGA GATATCTAGT AATTGCCAGA GTTCTTTAAC        7080

TCCAACCGCC ATTCCATCAA CATAGGCTTG AGGTGTAATA CCAGCTTCTT CCGCTTTCTG        7140

CTGGATTTTC TGACCATGTT CATCAAGACC TGTCAGATAA AATACATCGT AGCCCATCAG        7200

GCGTTTGTAA CGTGCTAGGA CATCACATGC GATAGTTGTG TAGGCAGAAC CGATATGAAG        7260

TTTCCCAGAT GGATAGTAAA TCGGCGTTGT AATATAAAAA TTTTTTTCAG ACATAATTTT        7320

TCCTTTCCAG GCAAATGAAA CCTGTTTTTC TAACACTTCA TTATATCACA TTTTTAATGA        7380

ATTTCAATAG GGAAATCCAT ACAAAAACAA GATAGACGAG TGTCCATCTT GTTGATCTCA        7440

TTCATAACGA AGGGCTTCAA TTGGATCAAG TTTCGATGCC TTGTTGGCTG GCAAGACTCC        7500

AAAAATCATA CCAACACTAG CCGAAACTGC AAGACTAAAT AGGGCGACTG GGATTGATAC        7560

TCCAACTTCT ATACCTTCTA TTAAACCTTG CAGTAACAAA CCTGCTAAGg CAGTTAAACC        7620

ACTTGCAATT GTCAAGCCAA TTAAGCCACC TAACAAGGTC AAAATCATGG ATTCAATCAA        7680

AAACTGAATT AAAATATTGG CACGTGTTGC ACCCAAAGCC TTACGAAGAC CAATCTCACG        7740

AGTGCGCTCT GTCACCGAAA CCAGCATGAT GTTCATGACA CCAGTTCCTC CAACAAAGAG        7800

AGAAATCCCT GCGATGGAAC TAATAATCGT CGTCATAAAA CTAAACGATT GTTGAATTTC        7860

TGCAAATACA ACGGACTCAT CTGCCACCTG GTATTCTCCC TGTTGTAAGC CTGCAAGCTC        7920
```

726

```
TGTCATTTTT CGTGCCAGTT CTGGACCCAG AGTTGGGGTT AAACTGGTAT CATTCACTCG    7980

AAAGACAATA TTAGCTATTT CATCTACATT AAAATTCGCA GCAAGGGAGA TATTGGTAGT    8040

AATAGGCAAG CCACCAAACC CATATATTTT TGATCTTTTA GCCTCCGGAC TAGTATAAAC    8100

CCCAATGACC CGGTAACTAA ATCCATTGAC TTCTACAACC TTGTTAATAG CCTCTTGAGG    8160

AGATTCAAAT AAACTAATGG ACAATTCCTC ATCTAGCAAA ATGACACTTG CAAACTCTTT    8220

GAAATCTTGC TCTCTCAGAC TACGACCTGC AATAATTTCA TTCTTAACAG CGTCCATGTA    8280

AGTTCTGTTT CCACCTGTCA AATTAGCATT CTCAACCTTT TTATCTTGAT AGGTCAAGAT    8340

GGCATTCGTT GAATTGGTTA CATAGTAACT ATCCACTCCC TTCAGTTTAG CTGCCTCTTG    8400

GACCCAGGAT TCTTGCGGTT TTGGCGGTTC AACAGGAACT TCCTCTTCCT TTCCAGAAAC    8460

CGTAAAAGCT GATTGTTTCT GAGTAAAAGA CCCGTCTTTA CTTTTTTTAG GAGAGAAAAA    8520

GACGCTAATA TTTTTCTGAG ATTTAGTCAT ATCTTTATTG ACTTGACGAG ATAGGGAATC    8580

ACCCAAAGCC ATAATCACAA CAACTGATGA AACACCGATA ATAATCCCAA TCATAGTAAG    8640

CAAAGAACGC ATCTTGTGAG CCATGATAGA TGAAAAGGCA AATTTCAGAT TCTGCATCTT    8700

AGTTTTCCTC CTTTCCTAAC TGAGCACTGT CAGACGAAAT GACCCCATCC CGAATGACAA    8760

TCTGACGTTT GGCATAGGCA GCAATCTCAG GCTCATGCGT TACCATGATA ATGGTTTTTC    8820

CTTCTTTATT CAAATCAACC AATAATTGCA TAATTTGGTT ACCTGTTTTG GTATCCAAGG    8880

CTCCTGTCGG TTCATCCGCT AGGATAATAG AAGGATTGTT TACCAAGGCA CGCGCAATGG    8940

CTACACGTTG CTTTTGACCA CCAGATAATT CTGAAGGTAA ATGGTGACTA CGTTCTGTCA    9000

ATTCAACCTT GTCTAAATAT TCCTCAGCCA ACTTGCGACG TTTTGAAGAC GAAACTCCTG    9060

CGTAAATCAA GGGCAATTCT ACATTTTGCA GAGCATTGAG CTTCGATAGA AGAAAGAACT    9120

GCTGAAAGAC AAAACCGATT TGTTGGTTAC GGACCTTAGC TAGTTGTTTT TCACCAAGCC    9180

CAGCCACTTC TTGACCTTCA AGATAATATT CTCCACTGGT TGGTGTATCC AACATGCCAA    9240

TCGTATTCAT CAGAGTGGAC TTACCAGACC CAGATGGTCC CATGATGGCT ACAAATTCAC    9300

CCTCATTCAC TTCTAGATTG ATATTTTTGA GAACCTGCAG TTCTTGGTCA CCATTACGGT    9360

AACTTCTGAA GATATTTTTT AGACTAATTA GTTGCTTCAT CAGCCTTCAC CTCTTTTCCT    9420

TCTTCCAAGG AAGATGTTGG ATTACTGATG ACCTTAGCAC CGTTCGTTAA ACCAGAAGTG    9480

ATTTCTTGAT TTTCTGCGTC AGCATTTCCC AATGAAACCT CAACTTTTTT AGCCTTTTGT    9540

TGTTCATCCA CAATCCAGAC ATAATTTTTA CTATCATCCA TTACTAGACT GCTAACAGGA    9600

ACAAGAATAG CCTTAGTTTT GCTTTTAACC TCAATGTTGA CAGAAAAACC TTGTTTCAAA    9660

TCACCAACCT CGCCTGTCAC ATCAATAGTA TAAGGGTATT TAGAACCTGT ATTATTCCCG    9720
```

727

```
GCTGCTGGAC TAGCTGCTTC ACCATTGTTT TTAGGATAGT CAGAAATATA GCTTAATTTC      9780

CCAGTCCATT TTTTATCAGG ATACACTTTA GAAGTAAAGC TTACTTCTTG ACCTACAGAA      9840

AGGTTGGCTA GATTGTACTC AGACAATTCT CCCTTGACTT GTAAATTTTC ATTGCTGACA      9900

ATATGAACCA TAACTTGACT CGCCCCTGTT GGAGATTTAG AAACATTGCT ATTGACTTCG      9960

ACCACAGTTC CCTCTAGGGT ACTGAGAACA GTTGTTGCAT CCAATTGACT TTGAGCCTTG     10020

CTTAATTGCG CCGCAGCATC TGCACGCGCA TCACGGGCAT CACCCAATTG AGCGTCAATA     10080

GAAGCAACAG AATTTCCAGC CACTGGAGTT GGGCTTTGCA CCGTTGCATC TTCTCCTCCT     10140

ACTGGCGCTG GTAACTGTGG AGCCGGAGCT GAAGCGGCTT CATTTCGTGC TTGATTGAGT     10200

TCATTGATAT GACGATCTGC CCTAGCTACT GCTCGACTAG CTGAATCATA GGCCGCCTGC     10260

GCTTCTGAAC TACTGTACTT GACTAAAGCC TGCCCTTCGC TGACCTTATC GCCCACAGAA     10320

ACAAGGATTT CATCTAAATC ACCCTTACTA GCATCAAAAT AAACATATTG TTCATTTTTT     10380

GCTGTTACTG TCCCTGACAA TAAAACAGAG GAGGCCACGC TTCCTTCCTT GGCAACAACA     10440

AGATGAGTAG GCTCATCTTT TAGAGCAGTC TGAGAAGGTT GTCTAAAGAG TAAAATCCCC     10500

CCAGCACCCA ATACAACTAC ACTCGCAGCA CCGATTGCTG CATACAGTTG CCACTTTTTA     10560

GCTTTACCAT TCTTTTTCTT CATAATGAAA CTCCTTTTCT TTTTTACAAT ACTTTGCTAT     10620

TATACCAAAT TTCCCTCCAG CAAACAATAC AGTTCAGGAT TAAACAATCG TTCGGAATTT     10680

TGCTTTTCGG                                                           10690
```

(2) INFORMATION FOR SEQ ID NO: 94:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 8195 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

```
GAGAAAGCGC CCACGTTTCC CCGAAGGGAG AAAGGCGGAC AGGTATCCGG TAAGCGGCCA       60

GGGTCGGAAC AGGAGAGCGC AACGAGGGAG CTTCCCAGGG GGAAACGCCT GGTATCTTTA      120

TAGTCCTGTC GGGTTTCGCC ACCTCTGACT TGAGCGTCGA TTTTTGTGAT GCTCGTCAGG      180

GGGGCGGAGC CTATGGAAAA ACGCCAGCAA CGCGGCCTTT TTACGGTTCC TGGCCTTTTG      240

CTGGCCTTTT GCTCACATGT TCTTTCCTGC GTTATCCCCT GATTCTGTGG ATAACCGTAT      300

TACCGCCTTT GAGTGAGCTG ATACCGCTCG CCGCAGCCGA ACGACCGAGC GCAGCGAGTC      360
```

728

```
AGTGAGCGAG GAAGCGGAAG AGCGCCCAAT ACGCAAACCG CCTCTCCCCG CGCGTTGGCC        420

GATTCATTAA TGCAGCTGGC ACGACAGGTT TCCCGACTGG AAAGCGGGCA GTGAGCGCAA        480

CGCAATTAAT GTGAGTTAGC TCACTCATTA GGCACCCCAG GCTTTACACT TTATGCTTCC        540

GGCTCGTATG TTGTGTGGAA TTGTGAGCGG ATAACAATTT CACACAGGAA ACAGCTATGA        600

CaTGATTACG AATTCGAGCT CGGTACCCGG AAAATCCAGA AAATGCTTGA AAAAAATCCT        660

AGAAGATGGT ATAATACTAA ATTGTAAGGG TTATCACATA TAACTCAAAA AAAGAAAGAA        720

CAAAAGGAGA GTCAAACTAT GGCTTCTAAA GATTTCCACG TAGTGGCAGA AACAGGTATT        780

CACGCACGTC CAGCAACATT GTTGGTACAA ACTGCTAGCA AATTTGCTTC AGATATCACT        840

CTTGAGTACA AAGGTAAATC AGTTAACCTT AAATCAATTA TGGGTGTTAT GAGTCTTGGT        900

GTTGGCCAAG GTGCTGACGT AACTATCTCA GCTGAAGGTG CAGATGCAGA TGACGCTATC        960

GCTGCAATCT CAGAAACAAT GGAAAAAGAA GGATTGGCAT AAGGGAAATG ACAGAAATGC       1020

TTAAAGGAAT CGCAGCATCT GACGGTGTTG CAGTTGCAAA AGCATATCTA CTCGTTCAGC       1080

CGGATTTGTC ATTTGAGACT ATTACAGTCG AAGATACAAA CGCAGAAGAA GCTCGCCTTG       1140

ATGCCGCTCT ACAGGCATCA CAAGACGAGC TTTCTGTTAT TCGCGAGAAA GCAGTAGGTA       1200

CGCTCGGTGA AGAAGCAGCT CAAGTTTTTG ATGCTCACTT AATGGTTCTT GCTGACCCAG       1260

AAATGATCAG CCAAATCAAG GAAACTATCC GTGCGAAGAA AGTGAATGCA GAAGCAGGTC       1320

TGAAAGAAGT TACAGATATG TTTATCACTA TCTTTGAAGG CATGGAAGAC AACCCATACA       1380

TGCAAGAACG CGCAGcGGAT wTCCGCGACG TGACAAAACG TGTATTGGCA AACCTTCTTG       1440

GTAAAAAATT GCCAAACCCA GCTTCTATCA ATGAAGAAGT GATTGTGATT GCGCATGACT       1500

TGACTCCTTC AGATACAGCT CAATTGGACA AAAACTTTGT AAAAGCTTTT GTAACCAACA       1560

TTGGTGGACG TACAAGCCAC TCAGCTATCA TGGCACGTAC ACTTGAAATT GCTGCTGTAT       1620

TAGGTACAAA TAACATCACT GAAATCGTTA AAGACGGTGA CATCCTTGCT GTTAACGGGA       1680

TCACTGGAGA AGTGATTATC AACCCAACAG ATGAACAAGC GGCAGAATTT AAAGCAGCTG       1740

GTGAAGCCTA TGCGAAACAA AAAGCTGAAT GGGCACTTTT GAAAGATGCT CAAACAGTGA       1800

CTGCTGACGG TAAACACTTC GAGTTGGCTG CTAATATCGG TACTCCAAAA GACGTTGAAG       1860

GTGTTAACAA CAACGGTGCA GAAGCTGTTG GACTTTACCG TACAGAGTTC TTGTACATGG       1920

ATTCTCAAGA CTTCCCAACT GAAGATGAGC AGTATGAAGC ATACAAGGCT GTTCTTGAAG       1980

GAATGAACGG TAAACCTGTT GTCGTTCGTA CAATGGATAT CGGTGGAGAT AAGGAACTTC       2040

CTTACTTCGA TATGCCTCAC GAAATGAACC CATTCCTTGG ATTCCGTGCT CTTCGTATCT       2100

CTATCTCTGA GACTGGAGAT GCTATGTTCC GCACACAAAT CCGTGCTCTT CTTCGTGCGT       2160
```

729

```
CTGTTCACGG TCAATTGCGT ATCATGTTCC CAATGGTTGC GCTCTTGAAA GAATTCCGTG      2220

CAGCGAAAGC AGTCTTTGAT GAAGAAAAAG CAAACCTTCT TGCTGAAGGT GTTGCAGTTG      2280

CGGATAACAT CCAAGTTGGT ATCATGATCG AGATTCCTGC AGCGGCTATG CTTGCAGACC      2340

AATTTGCTAA AGAAGTTGAC TTCTTCTCAA TTGGTACAAA CGACTTGATC CAATATACAA      2400

TGGCAGCAGA CCGTATGAAC GAACAAGTTT CATACCTTTA CCAACCATAC AACCCATCAA      2460

TCCTACGCTT GATTAACAAT GTGATCAAAG CAGCTCACGC TGAAGGTAAA TGGGCTGGTA      2520

TGTGTGGTGA GATGGCTGGT GACCAACAAG CTGTTCCACT TCTTGTCGGA ATGGGCTTGG      2580

ATGAGTTCTC TATGTCAGCA ACATCTGTAC TTCGTACACG CAGCTTGATG AAGAAACTCG      2640

ACACAGCTAA GATGGAAGAG TACGCAAACC GTGCCCTTAC AGAATGCTCA ACAATGGAAG      2700

AAGTTCTTGA ACTTCAAAAA GAATACGTTA ATTTTGATTA ATCGAAAAGT CCCTGCAACT      2760

CAGTTACAGG GATTTTTTTG ATATTTTAAA AAGAATTTTC AAGAAAATCT TTCTTATAGA      2820

AAGTCCAACC TTGAAAAAGT AGTGGTCAGA ACAAAAAATA CTTAAATGGT TCATAAAATT      2880

CTTGACAAGT TGGATATTTA GGAGTAAACT ATTAACCAGT TAAGTAATAG AGAGGAGTTT      2940

CTGCAATTTA GAAATGAATT GCAACTAGAA ATATCAAATA GAAAGAGAGT TTCGATGAAA      3000

ATTAATAAGA AATACCTTGT TGGTTCTGCG GCACTTTGAT TTTAAGTGTT TGTTCTTACG      3060

AGTTGGGACT GTATCAAGCT AGAACGGTTA AGGAAAATAA TCGTGTTTCC TATATAGATG      3120

GAAAACAAGC GACGCAAAAA ACGGAGAATT TGACTCCTGA TGAGGTTAGC AAGCGTGAAC      3180

GAATCAATGC TGAGCAAATC GTCATCAAGA TAACAGACCA AGGCTATGTC ACTTCACATG      3240

GCGACCACTA TCATTATTAC AATGGTAAGG TTCCTTATGA CGCTATCATC AGTGAAGAAT      3300

TACTCATGAA AGATCCAAAC TATAAGCTAA AAGATGAGGA TATTGTTAAT GAGGTCAAGG      3360

GTGGATATGT TATCAAGGTA GATGGAAAAT ACTATGTTTA CCTTAAGGAT GCTGCCCACG      3420

CGGATAACGT CCGTACAAAA GAGGAAATCA ATCGACAAAA ACAAGAGCAT AGTCAACATC      3480

GTGAAGGTGG AACTCCAAGA AACGATGGTG CTGTTGCCTT GGCACGTTCG CAAGGACGCT      3540

ATACTACAGA TGATGGTTAT ATCTTTAATG CTTCTGATAT CATAGAGGAT ACTGGTGATG      3600

CTTATATCGT TCCTCATGGA GATCATTACC ATTACATTCC TAAGAATGAG TTATCAGCTA      3660

GCGAGTTGGC TGCTGCAGAA GCCTTCCTAT CTGGTCGAGG AAATCTGTCA AATTCAAGAA      3720

CCTATCGCCG ACAAAATAGC GATAACACTT CAAGAACAAA CTGGGTACCT TCTGTAAGCA      3780

ATCCAGGAAC TACAAATACT AACACAAGCA ACAACAGCAA CACTAACAGT CAAGCAAGTC      3840

AAAGTAATGA CATTGATAGT CTCTTGAAAC AGCTCTACAA ACTGCCTTTG AGTCAACGAC      3900
```

730

```
ATGTAGAATC TGATGGCCTT GTCTTTGATC CAGCACAAAT CACAAGTCGA ACAGCTAGAG    3960

GTGTTGCAGT GCCACACGGA GATCATTACC ACTTCATCCC TTACTCTCAA ATGTCTGAAT    4020

TGGAAGAACG AATCGCTCGT ATTATTCCCC TTCGTTATCG TTCAAACCAT TGGGTACCAG    4080

ATTCAAGGCC AGAACAACCA AGTCCACAAC CGACTCCGGA ACCTAGTCCA GGCCCGCAAC    4140

CTGCACCAAA TCTTAAAATA GACTCAAATT CTTCTTTGGT TAGTCAGCTG GTACGAAAAG    4200

TTGGGGAAGG ATATGTATTC GAAGAAAAGG GCATCTCTCG TTATGTCTTT GCGAAAGATT    4260

TACCATCTGA AACTGTTAAA AATCTTGAAA GCAAGTTATC AAAACAAGAG AGTGTTTCAC    4320

ACACTTTAAC TGCTAAAAAA GAAAATGTTG CTCCTCGTGA CCAAGAATTT TATGATAAAG    4380

CATATAATCT GTTAACTGAG GCTCATAAAG CCTTGTTTGA AAATAAGGGT CGTAATTCTG    4440

ATTTCCAAGC CTTAGACAAA TTATTAGAAC GCTTGAATGA TGAATCGACT AATAAAGAAA    4500

AATTGGTAGA TGATTTATTG GCATTCCTAG CACCAATTAC CCATCCGAGC CGACTTGGCA    4560

AACCAAATTC TCAAATTGAG TATACTGAAG ACGAAGTTCG TATTGCTCAA TTAGCTGATA    4620

AGTATACAAC GTCAGATGGT TACATTTTTG ATGAACATGA TATAATCAGT GATGAAGGAG    4680

ATGCATATGT AACGCCTCAT ATGGGCCATA GTCACTGGAT TGGAAAAGAT AGCCTTTCTG    4740

ATAAGGAAAA AGTTGCAGCT CAAGCCTATA CTAAAGAAAA AGGTATCCTA CCTCCATCTC    4800

CAGACGCAGA TGTTAAAGCA AATCCAACTG GAGATAGTGC AGCAGCTATT TACAATCGTG    4860

TGAAAGGGGA AAAACGAATT CCACTCGTTC GACTTCCATA TATGGTTGAG CATACAGTTG    4920

AGGTTAAAAA CGGTAATTTG ATTATTCCTC ATAAGGATCA TTACCATAAT ATTAAATTTG    4980

CTTGGTTTGA TGATCACACA TACAAAGCTC CAAATGGCTA TACCTTGGAA GATTTGTTTG    5040

CGACGATTAA GTACTACGTA GAACACCCTG ACGAACGTCC ACATTCTAAT GATGGATGGG    5100

GCAATGCCAG TGAGCATGTG TTAGGCAAGA AAGACCACAG TGAAGATCCA AATAAGAACT    5160

TCAAAGCGGA TGAAGAGCCA GTAGAGGAAA CACCTGCTGA GCCAGAAGTC CCTCAAGTAG    5220

AGACTGAAAA AGTAGAAGCC CAACTCAAAG AAGCAGAAGT TTTGCTTGCG AAAGTAACGG    5280

ATTCTAGTCT GAAAGCCAAT GCAACAGAAA CTCTAGCTGG TTTACGAAAT AATTTGACTC    5340

TTCAAATTAT GGATAACAAT AGTATCATGG CAGAAGCAGA AAAATTACTT GCGTTGTTAA    5400

AAGGAAGTAA TCCTTCATCT GTAAGTAAGG AAAAAATAAA CTAATGAAAA ATGAAAGTCT    5460

CGATAAAGAG GCTTTCATTT TTATTATGTA TATATGTAAA ATTCTTGACA AGCAATATTA    5520

AAAAGAGTAA ACTATTAACT AGTTAATTAA CCGGTTTATT ACTTTATAGT GAATCAAATA    5580

TACTTAAGAA AAGAGGAAAG AATGAAAATT AATAAAAAAT ATCTAGCAGG TTCAGTGGCA    5640

GTCCTTGCCC TAAGTGTTTG TTCCTATGAA CTTGGTCGTC ACCAAGCTGG TCAGGTTAAG    5700
```

731

```
AAAGAGTCTA ATCGAGTTkC TTATATAGAT GGTGATCAGG CTGGTCAAAA GGCAGAAAAC      5760

TTGACACCAG ATGAAGTCAG TAAGAGGGAG GGGATCAACG CCGAACAAAT CGTCATCAAG      5820

ATTACGGATC AAGGTTATGT GACCTCTCAT GGAGACCATT ATCATTACTA TAATGGCAAG      5880

GTCCCTTATG ATGCCATCAT CAGTGAAGAG CTCCTCATGA AAGATCCGAA TTATCAGTTG      5940

AAGGATTCAG ACATTGTCAA TGAAATCAAG GGTGGTTATG TTATCAAGGT AGATGGAAAA      6000

TACTATGTTT ACCTTAAGGA TGCAGCTCAT GCGGATAATA TTCGGACAAA AGAAGAGATT      6060

AAACGTCAGA AGCAGGAACA CAGTCATAAT CACGGGGGTG GTTCTAACGA TCAAGCAGTA .    6120

GTTGCAGCCA GAGCCCAAGG ACGCTATACA ACGGATGATG GTTATATCTT CAATGCATCT      6180

GATATCATTG AGGACACGGG TGATGCTTAT ATCGTTCCTC ACGGCGACCA TTACCATTAC      6240

ATTCCTAAGA ATGAGTTATC AGCTAGCGAG TTAGCTGCTG CAGAAGCCTA TTGGAATGGG      6300

AAGCAGGGAT CTCGTCCTTC TTCAAGTTCT AGTTATAATG CAAATCCAGC TCAACCAAGA      6360

TTGTCAGAGA ACCACAATCT GACTGTCACT CCAACTTATC ATCAAAATCA AGGGGAAAAC      6420

ATTTCAAGCC TTTTACGTGA ATTGTATGCT AAACCCTTAT CAGAACGCCA TGTGGAATCT      6480

GATGGCCTTA TTTTCGACCC AGCGCAAATC ACAAGTCGAA CCGCCAGAGG TGTAGCTGTC      6540

CCTCATGGTA ACCATTACCA CTTTATCCCT TATGAACAAA TGTCTGAATT GGAAAAACGA      6600

ATTGCTCGTA TTATTCCCCT TCGTTATCGT TCAAACCATT GGGTACCAGA TTCAAGACCA      6660

GAACAACCAA GTCCACAATC GACTCCGGAA CCTAGTCCAA GTCCGCAACC TGCACCAAAT      6720

CCTCAACCAG CTCCAAGCAA TCCAATTGAT GAGAAATTGG TCAAAGAAGC TGTTCGAAAA      6780

GTAGGCGATG GTTATGTCTT TGAGGAGAAT GGAGTTTCTC GTTATATCCC AGCCAAGGAT      6840

CTTTCAGCAG AAACAGCAGC AGGCATTGAT AGCAAACTGG CCAAGCAGGA AAGTTTATCT      6900

CATAAGCTAG GAGCTAAGAA AACTGACCTC CCATCTAGTG ATCGAGAATT TTACAATAAG      6960

GCTTATGACT TACTAGCAAG AATTCACCAA GATTTACTTG ATAATAAAGG TCGACAAGTT      7020

GATTTTGAGG CTTTGGATAA CCTGTTGGAA CGACTCAAGG ATGTCyCAAG TGATAAAGTC      7080

AAGTTAGTGG ATGATATTCT TGCCTTCTTA GCTCCGATTC GTCATCCAGA ACGTTTAGGA      7140

AAACCAAATG CGCAAATTAC CTACACTGAT GATGAGATTC AAGTAGCCAA GTTGGCAGGC      7200

AAGTACACAA CAGAAGACGG TTATATCTTT GATCCTCGTG ATATAACCAG TGATGAGGGG      7260

GATGCCTATG TAACTCCACA TATGACCCAT AGCCACTGGA TTAAAAAAGA TAGTTTGTCT      7320

GAAGCTGAGA GAGCGGCAGC CCAGGCTTAT GCTAAAGAGA AAGGTTTGAC CCCTCCTTCG      7380

ACAGACCATC AGGATTCAGG AAATACTGAG GCAAAAGGAG CAGAAGCTAT CTACAACCGC      7440
```

732

```
GTGAAAGCAG CTAAGAAGGT GCCACTTGAT CGTATGCCTT ACAATCTTCA ATATACTGTA      7500

GAAGTCAAAA ACGGTAGTTT AATCATACCT CATTATGACC ATTACCATAA CATCAAATTT      7560

GAGTGGTTTG ACGAAGGCCT TTATGAGGCA CCTAAGGGGT ATACTCTTGA GGATCTTTTG      7620

GCGACTGTCA AGTACTATGT CGAACATCCA AACGAACGTC CGCATTCAGA TAATGGTTTT      7680

GGTAACGCTA GCGACCATGT TCGTAAAAAT AAGGTAGACC AAGACAGTAA ACCTGATGAA      7740

GATAAGGAAC ATGATGAAGT AAGTGAGCCA ACTCACCCTG AATCTGATGA AAAAGAGAAT      7800

CACGCTGGTT TAAATCCTTC AGCAGATAAT CTTTATAAAC CAAGCACTGA TACGGAAGAG      7860

ACAGAGGAAG AAGCTGAAGA TACCACAGAT GAGGCTGAAA TTCCTCAAGT AGAGAATTCT      7920

GTTATTAACG CTAAGATAGC AGATGCGGAG GCCTTGCTAG AAAAAGTAAC AGATCCTAGT      7980

ATTAGACAAA ATGCTATGGA GACATTGACT GGTCTAAAAA GTAGTCTTCT TCTCGGAACG      8040

AAAGATAATA ACACTATTTC AGCAGAAGTA GATAGTCTCT TGGCTTTGTT AAAAGAAAGT      8100

CAACCGGCTC CTATACAGTA GTAAAATGAA TGGAGCATAT TTTATGGAGA AGTAACCTTT      8160

CGTGTTACTT CTCTTTTTTA GAAAAACGTA ACAGA                                 8195
```

(2) INFORMATION FOR SEQ ID NO: 95:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2004 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95:

```
TTTACTAAAA GGAAAAAAGA ACTGATTTCT CAGTCCTTCA TTAATCTTAT TCCACACTAA        60

ATAGGTATGG GTAAACAGGT TGTTGACCTT GGTGAATCTC GACTTCAACG TCTTCGAATT       120

CTTCTACGAT TTCTTGAGCG ATTTCATTGG CAAGTTCTTC GCTTCCGTCT TCACCTACAT       180

AGAAGGTTAC GATTTCACTG TCTTCATCCA ACATATGTTT CAAGGTTTCA GTCAATGTTT       240

GGTGCATATC AGGGTTTGAC ACAAGAATTT TTCCATCCAC CATACCTAAA TTATCGTTTT       300

CATGGATTTC TAAGCCATCG ATCGTTGTAT CACGCACGGC TGTTGTGACG CTTCCGCTAA       360

CGACATCGCT AAGAGCAGCT GTCATACGCT CTTGGTTTTC TTCAATGGAC TTGCTTGGAT       420

CAAAGGCAAG AAGACTTGTC ATACCTTGAG GAAGAGTGCG AGCCTCTACC ACTACCGCTG       480

GTTGCTCCAA AACTTCTGCC GCAGATTGAG CTGCCATGAA GATGTTCTTG TTGTTTGGCA       540

AGAAGATGAT GTTACGGGCA TTAACCTGTT CAACAGCCTT GATAAAGTCT TCTGTTGAAG       600

GGTTCATGGT TTGACCGCCT TCGATAACAT AATCCACGCC TTGAGAACAG AAGATATCTG       660
```

733

CTAGACCTTT ACCAGCCACC ACAGCAATCA AAGCATACTC TTTTTCTTCA GCCGACTTGA   720

TAACTTGAGT AGCTTCTTTC TCAACCTGTG CTTCGTGTTG GTTACGCATA TTGTCAACTT   780

TTACCTTGAC CAAGCTACCA TATTTGAGAC CTTCTTGCAT AACAAGTCCT GGATCTTCTG   840

TATGAACATG GACTTTGACA ATTTCATCAT CGTTAACAAC AAGGAGAGAA TCTCCAAGCT   900

CATCCAAGTA GTTACGGAAT TCATCGTAGT CAAAATCTTT AGCATAGGTT GGACCTTGCT   960

TAAGAGCTAC CATGATTTCA GTACAGTAAC CAAACGTGAT GTCCTCAGTC GCTACGTGAC   1020

CAGCTACAGA CTTATGATGC TCTACATTGA TCATCTCACT CATGTTGGCA GGAGTCGCTA   1080

CAAAGTCCTC AGATGCAATA TATTCGCCAG TAAGGGCTGA AAGGAAACCT TCGTAGATGA   1140

AGACCAATCC TTGACCACCT GAGTCCACAA CGCCAACTTC TTTCAATACT GGAAGCATGT   1200

CTGGTGTTTT AGCTAGAGCT GTTTTAGCAC CTTCCAAGGC TGCGCGCATG ACTTCAACAG   1260

CGTCATCTGT TTGCTCAGCT TTTTTCTTAG CACCGATAGC AGCTCCACGA GAAACTGTTA   1320

AAATCGTTCC TTCAACAGGT TTCATCACTG CCTTATAGGC AACTTCCACA CCTGATTGGA ·   1380

AGGCCAGAGC CAAGTCTTGA CCTGTTAACT CGTCTTTATC CTTGATAGCT TGGGAAAATC   1440

CACGGAAAAG CTGAGACGTA ATCACTCCTG AGTTCCCACG CGCACCCATC AAAAGCCCTT   1500

TGGCAAGAAT GCTCGCTACT TCTCCAACTG TAGAAGCTGG CTTGTCTGCA ACTTCTTTAG   1560

CACCATTTTC AATGGTCATT CCCATATTTG TCCCAGTATC TCCATCTGGA ACTGGAAAGA   1620

CGTTTAATGA ATTGACATAT TCAGCTTGCT TATTCAAGCG AGTTGATGCA GCCTGCACCA   1680

TTTCTTGAAA TAAGCTAGTA GTAATTTTTG ACACGGTTAT TCTCCTACAA CTTTGATATT   1740

TTGAATGTAG ACATTTACAG TCTGAGCAGT AATTCCAAGC TGGTTTTCCA AGCTAAAGGC   1800

AACACGCTCT TGAATGTTTT TTGACACTTC ACTAATCTTT GTTCCGTAGC TTAACACGGT   1860

ATATACATCA ACTGCAATAC TGCCATCTTC GGCTGCCTTT ACGACGACAC CTTTAGAATA   1920

ATTTTCCTTA CCTAGCAGGG CTTGGAAATT ATCTTTGAGG GCATTTTTAC TAGCCATACC   1980

GACCACACCA GAAATCTCAG TTGC   2004

(2) INFORMATION FOR SEQ ID NO: 96:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 11915 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

734

```
CCGGGTTGGG CTGTTCGCCC ATTAAAGCGG CACCACAGCT GGGTTCAGAA CGTCGTGAGA        60

CAGTTCGGTC CCTATCCGTC GCGGGCGTAG GAAATTTGAG AGGATCTGCT CCTAGTACGA       120

GAGGACCAGA GTGGACTTAC CGCTGGTGTA CCAGTTGTCT TGCCAAAGGC ATCGCTGGGT       180

AGCTATGTAG GGAAGGGATA AACGCTGAAA GCATCTAAGT GTGAAACCCA CCTCAAGATG       240

AGATTTCCCA TGATTATATA TCAGTAAGAG CCCTGAGAGA TGATCAGGTA GATAGGTTAG       300

AAGTGGAAGT GTGGCGACAC ATGTAGCGGA CTAATACTAA TAGCTCGAGG ACTTATCCAA       360

AGTAACTGAG AATATGAAAG CGAACGGTTT TCTTAAATTG AATAGATATT CAATTTTGAG       420

TAGGTATTAC TCAGAGTTAA GTGACGATAG CCTAGGAGAT ACACCTGTAC CCATGCCGAA       480

CACAGAAGTT AAGCCCTAGA ACGCCGGAAG TAGTTGGGGG TTGCCCCCTG TGAGATAGGG       540

AAGTCGCTTA GCTCTAGGGA GTTTAGCTCA GCTGGGAGAG CATCTGCCTT ACAAGCAGAG       600

GGTCAGCGGT TCGATCCCGT TAACTCCCAT TTTAGCGGGT GTAGTTTAGT GGTAAAACTA       660

CAGCCTTCCA AGCTGTTGTC GCGAGTTCGA TTCTCGTCAC CCGCTTTGAA CTTTGTTCTT       720

TGTACCAAGT TTTTGACTTG GGCGCGTAGC TCAGGTGGTT AGAGCGCACG CCTGATAAGC       780

GTGAGGTCGG TGGTTCGAGT CCACTCGTGC CCATAGTGTT TAGTCCATTA CTAGGGGATT       840

GGAATATTAT CTGTTCACTA AGAGGACACG GGCTTGTTCC CGTATAAACT ATTTTGGAGG       900

ATTACCCAAG TCCGGCTGAA GGGAACGGTC TTGAAAACCG TCAGGCGTGT AAAAGCGTGC       960

GTGGGTTCGA ATCCCACATC CTCCTTTTAT ATTAACGCGG GATGGAGCAG CTCGGTAGCT      1020

CGTCGGGCTC ATAACCCGAA GGTCGTAGGT TCAAATCCTG CTCCCGCAAT AAGGCTCGGT      1080

AGCTCAGTTG GTAGAGCAAT GGATTGAAGC TCCATGTGTC GGCGGTTCGA TTCCGTCTCG      1140

CGCCATTTAT ATATTTTGGA AGGGTAGCGA AGAGGCTAAA CGCGGCGGAC TGTAAATCCG      1200

CTCCTTCGGG TTCGGGGGTT CGAATCCCTC CCCTTCCATT TTACGGGCAT AGTTTAAAGG      1260

TAGAACTAAG GTCTCCAAAA CCTTCAGTGT GGGTTCAATT CCTACTGCCC GTGTTAATAG      1320

AATTATGGCG GGTGTGGTGA AGTGGTTAAC ACACCAGATT GTGGCTCTGG CATGCGTGGG      1380

TTCGATCCCC ATCACTCGCC TATTTTATAT TGGGGTATAG CCAAGCGGTA AGGCAAGGGA      1440

CTTTGACTCC CTCATGCGTT GGTTCGAATC CAGCTACCCC AGTTACTATT TGCCGGCGTG      1500

GCGGAATTGG CAGACGCGCT GGACTCAAAA TCCAGTGTCC GCAAGGACGT GCCGGTTCGA      1560

CCCCGGCCGC CGGTATAGTA TAGTGTTAGG AACGTTGTTA TTCTTCGTTC CTTTTTTATA      1620

TTATTTTTGG TATAATTATA GTTATTCAAA TTTTATTTAG ATTAAGAAAG TGTAGGGGAG      1680

TATGTCTTGT TCTATCGATT TATTAAAACA TCGGTATTTG AAAAATATTA AAGAAAATCC      1740

TGAATTGTTT GTCGGAATTG AGTTGGAGTA TCCTGTTGCA AGTTTAGAAG GGGATGCTAC      1800
```

```
AGATGTTGAA  GTTATGAAGG  ATCTATTTCA  TTATTTAGTT  TCTACTTTGG  ATCTCACCGT      1860

AGCAAAGGTA  GATGATTTTG  GCAATCTGAT  CCAGTTAGTA  GATCCGATAA  GTCAGGATGC      1920

TATTTTATTT  GAAGTTTCCT  ATACAACGAT  TGAGTTTGCA  TTTGGTAAGG  CTGAAACGAT      1980

TCAAGAGGTC  GAAAATCGTT  TCAATAATTA  TATGAATGTA  ATTCAGAGAA  AGTTAGCTGA      2040

ATCAAATCAT  GCTATTGTTG  GCTGTGGTAT  CCATCCCAAC  TGGGATAAAA  ATGAGAATTG      2100

TCCAGTGGCT  TATCCACGCT  ATCAGATGTT  GATGGATTAT  TTGAATTTGA  GTAGAAATAT      2160

TATTAAATCA  GATTTACATC  ATTTCCCTGA  ATATGGTACT  TTTATCTGTG  GGAGCCAGGT      2220

TCAGCTGGAT  ATTTCAAAAA  CCAACTACTT  ACGGGTGATT  AATGCTTTTA  CTCAAATTGA      2280

AGCGGCTAAG  GCTTATTTAT  TTGCAAACTC  TGAATTTTCG  GGTGCGGATT  GGGATACGAA      2340

AATTTCAAGG  GATATTTTCT  GGGAAGAATC  TATGCATGGT  ATCTATCCAG  AGAATGTTGG      2400

GGTCAATGCT  AGACTCCTTA  ATGATGAAAC  TGATTTTTTT  GACTATCTAA  ATCATTCTGC      2460

GATTTTTACT  GCGGAACGTG  ATGGGCAGAC  CTATTATTTT  TATCCTATTC  AGGCTGGGGA      2520

CTATTTGGCT  ACGTCCGAAA  TCCAAGCATT  TGCTCTGAAT  GGGGATGAGG  TTATTATTTA      2580

CCCCCAAGAG  AAGGATTTTG  AAACTCATCG  TAGTTACCAG  TACCAAGATT  TAACGACTCG      2640

AGGAACAGTT  GAGTTTCGTA  GTGTGTGTAC  ACAGCCACTT  GATAGGACTT  TTGCTTCTGC      2700

AGCTTTTCAC  TTGGGATTAT  TGGTTAATTT  AGACAAGTTA  GAAGCTTACT  TAGAAACAGC      2760

ACCTTTCTTT  AAAGTATTTG  GTTATGATTA  CAAGTCTTTA  AGGAGACAAT  TTTCTAAGAA      2820

AAATCTTACA  GATGAGGAAG  AAACTACGAT  TATTGAATTT  TCCAAAGACT  TACTCCTACT      2880

AGCTGAGGAG  GGACTAGTGG  TGAGAAATAA  GGAAGAAATG  ACCTATTTAC  AGCCTTTGAG      2940

AGAAGAATTG  AGCCTATAAT  TTCTCTTATA  AAGGGAGAAT  TTTCTGAAAA  ATCATGATAT      3000

AATGGACGAG  ACTATAGATA  AAGGATAGAG  AGTAATGACA  TTAGTTTATC  AATCAACGCG      3060

TGATGCCAAC  AATACAGTAA  CTGCCAGCCA  AGCAATTTTG  CAAGGTTTGG  CGACGGACGG      3120

CGGTTTGTTT  ACACCGGATA  CTTATCCAAA  GGTAGATTTG  AACTTTGACA  AATTGAAAGA      3180

TGCTTCTTAC  CAGGAAGTTG  CTAAGCTAGT  TTTGTCAGCA  TTTTTAGATG  ACTTTACAGT      3240

TGAGGAGTTG  GACTACTGTA  TCAACAATGC  CTACGATAGC  AAATTTGATA  CTCCAGCTAT      3300

TGCACCATTA  GTGAAATTAG  ATGGGCAATA  CAATTTGGAA  CTTTTCCATG  GTTCAACGAT      3360

TGCCTTTAAG  GATATGGCCT  TGTCTATTTT  GCCATACTTT  ATGACGACTG  CTGCTAAGAA      3420

ACATGGTTTG  GAGAACAAGA  TTGTTATCTT  GACAGCGACA  TCTGGTGACA  CGGGGAAAGC      3480

TGCTATGGCG  GGGTTTGCGA  ATGTGCCTGG  TACTGAGATT  ATCGTCTTTT  ATCCAAAGGA      3540
```

736

```
TGGTGTCAGC AAGATTCAAG AGTTACAAAT GACCACTCAG ACTGGCGACA ATACTCATGT     3600

TATTGCTATT GATGGTAACT TTGACGATGC GCAAACAAAT GTGAAGCACA TGTTTAACGA     3660

CGTGGCTCTT CGTGAAAAAT TGACTACCAA CAAGTTGCAA TTTTCATCAG CTAACTCTAT     3720

GAACATTGGT CGTCTGGTGC CACAAATTGT TTATTATGTT TATGCTTACG CTCAATTGGT     3780

TAAGACTGGT GAAATTGTAG CTGGTGAAAA GGTTAACTTC ACAGTACCAA CAGGAAACTT     3840

TGGAAATATC TTGGCTGCCT TTTATGCCAA ACAAATTGGT TTGCCAGTTG GTAAATTAAT     3900

CTGTGCTTCA AATGACAACA ATGTTTTGAC AGACTTCTTT AAAACACGTG TCTATGACAA     3960

AAAACGTGAG TTTAAGGTAA CAACCAGCCC ATCTATGGAT ATCTTGGTAT CTTCAAACTT     4020

GGAGCGCTTG ATTTTCCATC TTTTGGGAAA TAATGCTGAA AAGACAACTG AACTTATGAA     4080

TGCCTTGAAC ACGCAAGGAC AATATAAGTT GACAGACTTT GATGCAGAGA TTTTGGACCT     4140

CTTTGCAGCT GAATATGCGA CTGAGGAAGA AACGGCAGCA GAGATCAAGC GTGTTTGTGA     4200

GTTAGATTCT TATATCGAGG ACCCTCATAC AGCTGTTGCT TCAGCAGTTT ATAAAAAATA     4260

CCAATCGGCC ACTGGAGATG TAACTAAGAC AGTGATTGCT TCAACAGCTA GTCCATACAA     4320

GTTCCCAGTA GTTGCAGTAG AAGCTGTAAC TGGAAAAGCA GGTTTAACAG ACTTTGAAGC     4380

CTTGGCTCAA TTACATGAAA TCTCAGGCGT TGCAGTGCCA CCAGCAGTTG ATGGGCTTGA     4440

AATAGCTCCA ATTCGTCACA AGACAACAGT GGCAGCTGCT GACATGCAAG CAGCGGTTGA     4500

GGCTTATTTA GGACTTTAAG ACAGAGGGAG CAAACTCGGT TGGGAAACCA ACTGAGTTTC     4560

TTTTCATCAG GAGGAGAGAT TGTTTAAGAA AAATAAAGAC ATTCTTAATA TTGCATTGCC     4620

AGCTATGGGT GAAAACTTTT TGCAGATGCT AATGGGAATG GTGGACAGTT ATTTGGTTGC     4680

TCATTTAGGA TTGATAGCTA TTTCAGGGGT TTCAGTAGCT GGTAATATTA TCACCATTTA     4740

TCAGGCGATT TTCATCGCTC TGGGAGCTGC TATTTCCAGT GTTATTTCAA AAAGCATAGG     4800

GCAGAAAGAC CAGTCGAAGT TGGCCTATCA TGTGACTGAG GCGTTGAAGA TTACCTTACT     4860

ATTAAGTTTC CTTTTAGGAT TTTTGTCCAT CTTCGCTGGG AAAGAGATGA TAGGACTTTT     4920

GGGGACGGAG AGGGATGTAG CTGAGAGTGG TGGACTGTAT CTATCTTTGG TAGGCGGATC     4980

GATTGTTCTC TTAGGTTTAA TGACTAGTCT AGGAGCCTTG ATTCGTGCAA CGCATAATCC     5040

ACGTCTGCCT CTCTATGTTA GTTTTTTATC CAATGCCTTG AATATTCTTT TTTCAAGTCT     5100

AGCTATTTTT GTTCTGGATA TGGGGATAGC TGGTGTTGCT TGGGGGACAA TTGTGTCTCG     5160

TTTGGTTGGT CTTGTGATTT TGTGGTCACA ATTAAAACTG CCTTATGGGA AGCCAACTTT     5220

TGGTTTAGAT AAGGAACTGT TGACCTTGGC TTTACCAGCA GCTGGAGAGC GACTTATGAT     5280

GAGGGCTGGA GATGTAGTGA TCATTGCCTT GGTCGTTTCT TTTGGGACGG AGGCAGTTGC     5340
```

737

```
TGGGAATGCA ATCGGAGAAG TCTTGACCCA GTTTAACTAT ATGCCTGCCT TTGGCGTCGC      5400

TACGGCAACG GTCATGCTGT TGGCCCGAGC AGTTGGAGAG GATGATTGGA AAAGAGTTGC      5460

TAGTTTGAGT AAACAAACCT TTTGGCTTTC TCTGTTCCTC ATGTTGCCCC TGTCCTTTAG      5520

TATATATGTC TTGGGTGTAC CATTAACTCA TCTCTATACG ACTGATTCTC TAGCGGTGGA      5580

GGCTAGTGTT CTAGTGCACAC TGTTTTCACT ACTTGGGACC CCTATGACGA CAGGAACAGT      5640

CATCTATACG GCAGTCTGGC AGGGATTAGG AAATGCACGC CTCCCTTTTT ATGCGACAAG      5700

TATAGGAATG TGGTGTATCC GCATTGGGAC AGGATATCTG ATGGGGATTG TGCTTGGTTG      5760

GGGCTTGCCT GGTATTTGGG CAGGGTCTCT CTTGGATAAT GGTTTTCGCT GGTTATTTCT      5820

ACGCTATCGT TACCAGCGCT ATATGAGCTT GAAAGGATAG GAAATGCAAA AAACAGCTTT      5880

TATTTGGGAT TTAGACGGGA CTTTATTGGA CTCTTACGAA GCGATTTTAT CAGGGATTGA      5940

GGAGACTTTT GCTCAGTTTT CTATTCCTTA TGATAAGGAG AAGGTGAGAG AGTTTATCTT      6000

CAAGTATTCG GTGCAAGATT TGCTTGTGCG GGTGGCAGAA GATAGAAATC TGGATGTTGA      6060

GGTGCTAAAT CAGGTGCGTG CCCAGAGTCT GGCTGAGAAG AATGCTCAGG TAGTTTTGAT      6120

GCCAGGTGCG CGTGAGGTGC TAGCTTGGGC AGACGAATCA GGAATTCAGC AGTTTATATA      6180

TACTCATAAG GGGAACAACG CTTTTACCAT TCTCAAGGAC TTGGGGGTGG AATCCTATTT      6240

TACAGAGATT TTAACCAGTC AGAGTGGCTT TGTGCGGAAG CCAAGTCCAG AAGCGGCTAC      6300

CTATCTGCTA GATAAGTATC AGTTGAATTC TGATAATACT TATTATATAG GGGATCGGAC      6360

TCTGGATGTG GAATTTGCCC AGAATAGTGG GATTCAAAGC ATCAACTTTT TAGAGTCTAC      6420

TTATGAAGGG AATCACAGGA TTCAAGCGTT AGCAGATATT TCCCGTATTT TTGAGACTAA      6480

GTGATAAAAA GATTGTGTCA GTTTTGTGAC AGAGACCTAA CAAACTATTT CAAGTAACCT      6540

AGTTTGTTAC AAGGAATAGA CAGTTCTGTT AAATAGGCCC GAGAGGGCTT TTTTTCTACA      6600

TTTTTTGTGT TATGATAGAC AGGTACTCAT TTGAAAGGAA TTTGAAAGAA TGAAGAAAAG      6660

AATGTTATTA GCGTCAACAG TAGCCTTGTC ATTTGCCCCA GTATTGGCAA CTCAAGCAGA      6720

AGAAGTTCTT TGGACTGCAC GTAGTGTTGA GCAAATCCAA AACGATTTGA CTAAAACGGA      6780

CAACAAAACA AGTTATACCG TACAGTATGG TGATACTTTG AGCACCATTG CAGAAGCCTT      6840

GGGTGTAGAT GTCACAGTGC TTGCGAATCT GAACAAAATC ACTAATATGG ACTTGATTTT      6900

CCCAGAAACT GTTTTGACAA CGACTGTCAA TGAAGCAGAA GAAGTAACAG AAGTTGAAAT      6960

CCAAACACCT CAAGCAGACT CTAGTGAAGA AGTGACAACT GCGACAGCAG ATTTGACCAC      7020

TAATCAAGTG ACCGTTGATG ATCAAACTGT TCAGGTTGCA GACCTTTCTC AACCAATTGC      7080
```

738

```
AGAAGTTACA AAGACAGTGA TTGCTTCTGA AGAAGTGGCA CCATCTACGG GCACTTCTGT    7140

CCCAGAGGAG CAAACGACCG AAACAACTCG CCCAGTTGAA GAAGCAACTC CTCAGGAAAC    7200

GACTCCAGCT GAGAAGCAGG AAACACAAGC AAGCCCTCAA GCTGCATCAG CAGTGGAAGT    7260

AACTACAACA AGTTCAGAAG CAAAAGAAGT AGCATCATCA AATGGAGCTA CAGCAGCAGT    7320

TTCTACTTAT CAACCAGAAG AGACGAAAAT AATTTCAACA ACTTACGAGG CTCCAGCTGC    7380

GCCCGATTAT GCTGGACTTG CAGTAGCAAA ATCTGAAAAT GCAGGTCTTC AACCACAAAC    7440

AGCTGCCTTT AAAGAAGAAA TTGCTAACTT GTTTGGCATT ACATCCTTTA GTGGTTATCG    7500

TCCAGGAGAC AGTGGAGATC ACGGAAAAGG TTTGGCTATC GACTTTATGG TACCAGAACG    7560

TTCAGAATTA GGGGATAAGA TTGCGGAATA TGCTATTCAA AATATGGCCA GCCGTGGCAT    7620

TAGTTACATC ATCTGGAAAC AACGTTTCTA TGCTCCATTC GATAGCAAAT ATGGGCCAGC    7680

TAACACTTGG AACCCAATGC CAGACCGTGG TAGTGTGACA GAAAATCACT ATGATCACGT    7740

TCACGTTTCA ATGAATGGAT AAACCCGACT TGATAACATC ATTTTGACGA ATGAGATCTA    7800

GCTTTCGTGA TGGAAAGCGA TTCTCGTTCG TTTTTTCTTT GTCATACTCT TCGAAAATCT    7860

CTTCAAACCA CGTCAGTTTT ATCTGAAACT TCAAAGCTGT GCTTTGAGCA ACCTGCGACT    7920

AGCTTCCTAG TTTGCTTTTT GATTTTCATT GAGTATCAAT TTGAATGGAA AATGGAAAGT    7980

TATCATCTTG TAATGAGTTA AGCAACATTC TTGCAATCTA TTTTACTTTA TATCACAATT    8040

AATTAGTCAA ATATTGATAA ATCAATAAAA AGAGAGGGGA AGAAATGCTA GAGATTCAAG    8100

ATTTACTGTA TCAACTCCGC TTGTCTGAGC AAGCGAGTAC GCAATTGTTT GAAAAAAGGC    8160

TTGGGATTAG TTTGACACGG TATCAGATTT TACTGTTTTT GCTGGAGCAT TCTCCTTGTA    8220

ACCAAATGGC GGTTCAGGAG CGTTTGAAAA TTGATCAGGC TGCTTTGACA CGGCATTTCA    8280

AAATTTTGGA AACGGAAGGT TTGGTGGAGC GTCATCGTAA TCCTGAAAAT CAGCGGGAAG    8340

TGTTGGTAGA GGCTGCGAAG TATGCCAAGG AGCAGTTAGT GGTGAATCCC CCTCTGCAAC    8400

ATATCAGGGT TAAGGAAGAG ATAGAAAGTA TCTTAACAGA GTTTGAGAGA ACAGAACTCA    8460

GCCGTTTATT AAATAAATTG GTTTTGGGTA TTGAAAAATAT AGAAATTTAA GGAGAAATAG    8520

ATGTCAATTA TTTTAACAAC GATCGTTGCT TTGGAGCATT TTTACATTTT TTATTTGGAA    8580

AGTATTGCCA CGCAATCAGA TGCGACTAGT CGTGTATTTA ATATGGAAAA GGAAGAATTG    8640

GCTCATCCGT CAGTAAGTTC ATTGTTCAAA AATCAAGGAA TTTATAAGGC TCTGCTAGGA    8700

GTCTTTCTCT TGTATGTCAT TTATTTCTCA CAGAATTTAG AAATTGTGAC TATTTTTGTC    8760

TTATTTGTGA TTGGTGCTGC GACTTACGGC TCTTTAACAG CGGATAAAAA AATTATTTTG    8820

AAACAAGGTG GATCAGCTAT TTTGGCCTTG ATTAGTATTT TACTCTTTAA ATACACTTGA    8880
```

739

```
AGGTCGATTC TAATCTCGCT AATCCTTTTT AATCCAGAAT AAGGGAAATA TGTTATACTT      8940

GTTTTTAAGA AAAAAGTCTC ATTGAATTGG TTTTGAGGAG TTAGAAATGA AAGTATTAGT      9000

GACAGGTTTT GAGCCCTTTG GAGGGGAAAA GGGCAATCCA GCTTTGGAGG CCATTAAAGG      9060

TTTACCAGCT GAAATCCATG GTGCTGAGGT CCGTTGGCTA GAGGTGCCGA CAGTTTTTCA      9120

CAAATCTGCT CAAGTATTGG AAGAAGAGAT GAATCGTTAT CAACCTGACT TTGTCCTTTG      9180

TATTGGGCAA GCTGGTGGAA GAACTAGTTT GACACCTGAA CGAGTGACCA TTAATCAAGA      9240

CGATGCATGC ATTTCTGATA ACGAAGATAA TCAACCGATT GACCGTCCCA TTCGCCCAGA      9300

TGGTGCTTCG GCCTACTTTA GTAGTTTGCC GATTAAAGCG ATGGTTCAAG CTATAAAAAA      9360

AGAGGGCTTA CCGGCCTCTG TTTCCAATAC GGCAGGGACT TTTGTCTGCA GCCATTTGAT      9420

GTATCAGGCT CTCTATTTGG TAGAAAAGAA ATCTCCATAT GTTAAGGCAG GTTTTATGCA      9480

TATTCCTTAT ATGATGGAAC AGGTGGTGAA CAGACCGACT ACTCCAGCTA TGAGTTTAGT      9540

GGATATTCGG CGAGGGATAG AAGCAGCAAT CGGCGCTATA ATAGAACATG GAGATCAGGA      9600

ACTCAAGTTG GTAGGCGGAG AAACTCATTG ATAGAAAAAA GCTTGAGGGG AAAAACCTTC      9660

AAGCTTTTGG ACGTTTTCGG GCCAATACTG CTCGGTAAAA CATAATTTTA GTGCATTGGA      9720

TATAAGGTAG GAGTGAAAAA CTAGCAATGC CAAAGGTAAT CCAATTGAGG AAGTACCAAG      9780

GAAGAAGCTG TAAATCTAGG ACAAAGTGCT GGAACTTGTA GCCCTTCATA AAGGAACGGC      9840

TAGTTTTTAG GATTCGTCTT GGTGGGACCT GTCCTAGGTC TAGACTATAA CAGAGAAGAA      9900

ATTCCACCTG TGAATAGGCA TAATACTGTG GAATATAGAG GATATTTCCT ACAATGATCA      9960

AGATGAGACT TGCAAGAAAG TAGAGTCCAA AGACCATGAG GAAACGCTCG GTTTCAACTG     10020

ATGAGAGATC TAGATTTGGA AACTCAGGAT GTAGGGTGAC GAATTTTTTG GCTAAAAAGC     10080

TACTATAAAA GAGGAGGTAA ATCCCAAGTA AATTAGGGAT ACTCCATAAA AAGAGATAGA     10140

AACGTTTGAG AAGTAGGGTC AAAAAGGTTT GAGAAAAGCC CTCCTCATCA AAGAGAGCTA     10200

GGCTGTTTTT TACAGATGGC TCCGTTTTAG AATCTTTCAT GAGTGTCAGT GTTGCATAGA     10260

CGGAACTGGT CAAAAGAATA GTCCCGATAA AGGAGACTAG TAGAGGAAAG AGGTAGGTTT     10320

GAAGTATTTG GCCAAGTATG CTGAAAAATG GCTGTTCTAA AACAGTCCCG TGGATCCGAG     10380

ATAAGGGATT AAGAAAACCA GATAAGATGA CCAGCATACT GGGAAGGATA TAGAGGAGAA     10440

AGAGACGGGG GGTGTCAGCC TGAAAATGTT TTGACTCCTG ACGAATTGTT TTTAAATCAA     10500

TTTTTGGATA GTTCATTCTC TTATTATACC ATAGTTCTTA TACATAGTTC GTGACAGTTC     10560

CTACTTTTTT TGATAAAATC ATACAGTGTG TCCTTGGGCA CACTGTATGA ACTGGGACTG     10620
```

```
                                            740
TCTTTCCCAG CTTCGGAGGT AAAAAATGTC AGATTCACCA ATCAAATATC GTTTGATTAA    10680

GAAAGAAAAA CACACAGGAG CTCGTCTGGG AGAAATCATC ACTCCCCACG GTACCTTTCC    10740

GACACCTATG TTTATGCCAG TTGGGACACA AGCCACTGTC AAAACTCAGT CACCTGAAGA    10800

ATTGAAGGAG ATGGGTTCGG GAATTATCCT ATCAAACACC TATCATCTCT GGCTTCGCCC    10860

TGGAGATGAA CTCATTGCAC GCGCTGGTGG TCTCCACAAG TTCATGAATT GGGACCAGCC    10920

TATCTTGACA GATAGTGGTG GTTTTCAGGT TTATTCTTTA GCAGATAGCC GTAATATCAC    10980

AGAAGAAGGA GTAACCTTTA AAAATCATCT AAATGGTTCT AAGATGTTCC TATCCCCAGA    11040

AAAAGCCATC TCTATTCAGA ATAATCTGGG TTCAGACATC ATGATGTCCT TTGATGAATG    11100

TCCTCAGTTT TATCAACCTT ATGACTACGT TAAGAAATCG ATCGAGCGTA CCAGCCGTTG    11160

GGCTGAGCGT GGTTTGAAGG CTCACCGTCG TCCACATGAC CAAGGTTTGT TTGGAATTGT    11220

GCAAGGTGCA GGATTTGAAG ACCTTCGCCG CCAATCAGCT CATGATCTTG TCAGCATGGA    11280

TTTCTCAGGC TACTCTATCG GTGGTTTGGC AGTGGGAGAA ACCCATGAAG AGATGAATGC    11340

GGTCTTGGAC TTTACAACTC AACTGCTGCC TGAAAATAAA CCTCGTTATC TGATGGGTGT    11400

GGGAGCGCCA GATAGCTTGA TCGATGGGGT CATTCGTGGG GTGGATATGT TTGACTGTGT    11460

CTTACCGACT CGAATTGCTC GTAACGGGAC TTGTATGACC AGTCAAGGAC GTTTGGTTGT    11520

GAAAAATGCC CAGTTTGCTG AGGACTTTAC GCCACTGGAT CCTGAGTGTG ATTGCTACAC    11580

ATGTAATAAC TATACACGCG CTTACCTTCG TCACCTGCTC AAGGCTGATG AAACCTTTGG    11640

TATCCGCTTG ACTAGCTACC ACAATCTTTA CTTCTTGCTT AACCTGATGA AGCAAGTGCG    11700

ACAAGCCATC ATGGATGACA ATCTCTTGGA ATTCCGTGAG TATTTTGTGG AAAAATATGG    11760

CTATAATAAG TCAGGACGTA ATTTCTAAAA TGGAATTGAT ATAAAAAAAT CCTAAGTTTT    11820

CTCTTAGGAT TTTTCTTCTT TTTTTGATAG AATAAAGTGT ACAATGAAAG GAAGAATAAA    11880

CTCGTATGCG CATTAAATGG TTTTCCTCGA TTAGG                              11915
```

(2) INFORMATION FOR SEQ ID NO: 97:

    (i) SEQUENCE CHARACTERISTICS:
       (A) LENGTH: 9069 base pairs
       (B) TYPE: nucleic acid
       (C) STRANDEDNESS: double
       (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

```
GAGAGGGCAA CAGTTCTATC GCTTCAAATT TTTTCTTGGT TTGCAGATAT TCAAGAATCG      60

GGAGTTTTTC TATAGTATTC GGCAGATTTA TTACAGCCAA GCATCTCAAA AATACGGACA     120
```

741

```
GCATCCTCCA TCTTTTTCTG GCCTTCCTTG ACTCTACCTT GCTTGCTATC AAGGAGACCT          180

TCTGCCCACA GATAAACAAT TCGGAAATAG GTCTCATTTT CCTTGTAGAA ATGCTCTTCG          240

ATAACACGTT TAAAATAATA GGCATTGGTA AATTCTTCAC ACTCAATACT AGCTAAAAAG          300

CCATTCAATA GTATAGTATG AAAAAGGTTT CGATTGCCAG ACATTTCCAT TAGAAAATCA          360

GATTTACGTA CCATTTCTCG TACATATCTA GTAAAAAGAG AAACAGATAA AAATGGAGAA          420

CTGACTGAAA ATAAATTGAG TTCATAGATT CCCCAGATCT CGGTAGAAAA CAAATAATCA          480

TGAAGGACTT TTCCTTCCTC TGCTGTTAAG TCTACCCTTT CATCTATGCT CTTCATATAA          540

GACTTGATAA TAATGGCATT TAGAATATGT TTCTGTTTGT TGTGAGAATG GGCATGCTTT          600

TATACTCCCT GCGATATAAG TCCTCAAGAG GTGCTATATT CTTTGGTTCC AAGACATCTG          660

TAATTTCTTT TCTCAACTCA GAATCTGTAT CATACTGGAA ACCTCTTGCC AGAAAGAGGA          720

TCTCCTCCAC ACTGGCAGAT ATATTTTCCA GAGCAAATAG AAACTTTTCC ACCGAAAGCT          780

CACTCTGACC TGTTTCAAAA CGGGACAACA TAGACGGCGA AAATTGTCCT CCGGTTGCTT          840

GTCTCAGTGA GATATTTCTT GACTCTCGTA ATTGTCTAAA GACTTTTCCA ATCTGCTCCA          900

TAGACTTCCC CTTGATTCCG TATTTTCTTC ATTTTATCAT ATTTTTCAGA AAATTCATCA          960

AAAACTTGCC AAATTGTCAG AATTATGAGA AAATAGAGGA TATTTATCAC GTGGAGGGAC         1020

TGCTATGAGA GACGATATCA AAATCAATGA CCGTGCTTTG GCCTTGCAAG ACCAAATTAT         1080

CGAAAAACTA GAGAAAGTTT TTGATACAGA TGTGGAATTG GATGTTTACA ATCTAGGTCT         1140

GATTTATGAA ATCAATCTGG ATGAAACGGG GCTCTGCAAG ATTGTCATGA CCTTCACCGA         1200

TACTGCCTGT GATTGCGCCG AAAGCCTGCC TATTGAAATC GTGGCAGGTC TGAAACAAAT         1260

CGAGGGTATC AAAGATATCA AGGTTGAAGT TACCTGGTCG CCTGCTTGGA AAATCACACG         1320

AATCAGTCGC TATGGCCGTA TTGCCCTTGG ACTACCACCT CGTTAAGCAG ACCAATCACT         1380

TTTAAAGATG AAAATCAAAG GGCAAACTAG AAAACTAGCC GCAGGTTGCT CAAAACACTG         1440

TTTTGAAGTT ATGGATAGAA CTGACGAAGT CAGCTCAAAA CACTGTTTTG AGGTTGTGGA         1500

TAGAACTGAC GAAGTCAgCT CAAAACACTG TTTTGAGGTT GTGGATAGAA CTGACGAAGT         1560

CAGCCCAAAA CACTGTTTTG AGGTTGTGGA TAGAACTGAC GAAGTCAGTA ACCATACCTA         1620

CGGCAAGGCG ACGTTGACGT GATTTGAAGA GATTTTCGAG TATGAGTTTA TTTTTTACCT         1680

GACTTGTCCA TATTCCAGAA GTCTGTCACG GCTCCGCGTG AAGCAGATGA TACGATGTGG         1740

GCATATTTAC CGAGGACACC ACGGCTGTAA AGTGGTGGCA AGGTTGTTTC TGCCTTGCGT         1800

TTTTCAAGTT CTTCTTCGGA TACGGCCATA GAAATTTCTT TGGTATCTTG GTCAACCGTA         1860
```

742

```
ACGATATCGC CGGTACGGAG ATAGGCAATT GGTCCACCAT CCTGAGCTTC AGGAGCGATA      1920

TGTCCAACAA CCAGACCATA AGTACCACCA GAGAAACGTC CGTCCGTCAA GAGGGCCACC      1980

TTATCTCCCT GACCTTTACC AACAATCATT GAAGAAAGTG ATAGCATCTC AGGCATACCA      2040

GGACCACCTT TAGGTCCAAC AAAACGAACA ACGACTACAT CGCCATCAAC GATTTCATCT      2100

GTCAGAACGG CCTGAATCGC ATCTTCTTCT GAGTCAAAGA CCTTAGCTGG CCCAACGTGA      2160

CGACGCACTT TAACACCTGA TACCTTGGCA ACTGCACCGT CAGGAGCAAG GTTCCCGTTC      2220

AAGATGATAA GCGGACCATC CGCACGTTTT GGATTTTCAA GTGGCATGAT AACTTTTTGG      2280

CCTGGAGTCA AGTCTGCAAA GTCAGCCAAG TTTTCAGCTA CAGTCTTACC AGTACATGTG      2340

ATGCGATCTC CGTGAAGGAA ACCATTTGCC AACAAATACT TCATAACCGC AGGGACACCA      2400

CCGACTTCGT AGAGGTCTTG GAAGACATAC TGACCAGATG GTTTCAAGTC GGCCAAGTGA      2460

GGCACACGTT CTTGAATCGT ATTGAAGTCC TCAAGTGACA AGTCAACATT TGCGGCATGG      2520

GCAATGGCGA GCAAGTGAAG AGTGGCGTTT GTAGAACCAC CGAGAGCCAT CGTTACAGTG      2580

ATAGCATCTT CAAAGGCTTC ACGAGTCAAG ATATCTGATG GTTTGAGACC AAGTTCCAAC      2640

ATCTTAACAA CAGCACGTCC TGCTGCTTCG ATATCTTCTT TCTTATCAGC TGATTCAGCT      2700

GGGTGAGAGG ATGACCCTGG CAAACTCATC CCTAGAACTT CGATAGCAGT TGCCATGGTA      2760

TTAGCAGTAT ACATACCACC ACAACCACCA GGGCCAGGGC AGGCATTACA TTCAAGACGT      2820

TTCACGTCCT CAGCTGTCAT GTCACCGTGG TTCCATTTTC CGATACCTTC AAAGACAGAA.     2880

ACCAAGTCGA TATCTTTACC ATCAAGATTT CCCGGTGCAA TAGTTCCACC ATAGGCGAAA      2940

ATAGCTGGGA TATCCATATT AGCAATAGCA ATCATAGATC CAGGCATGTT CTTGTCACAG      3000

CCACCGATAG CGACGAAGGC ATCCACGTTG TGACCACTCA TAGCCGCCTC GATGGAGTCC      3060

GCGATGATGT CACGAGATGT TAGAGAGAAA CGCATACCAG GCGTTCCCAT AGCGATCCCG      3120

TCCGCTACGG TAATGGTTCC AAACTGTACA GGCCAAGCGC CTGCAGATTT GACACCTTCT      3180

TTAGCCAGTT TCCCGAAATC ATGCAAGTGA ATGTTACATG GTGTATTTTC CGCCCAAGTC      3240

GAAATCACTC CCACAATCGA TGTTTCAAAG TCCTTATCTG TCATACCAGT CGCACGAAGC      3300

ATAGCACGGT TAGGTGATTT AACCATGCTG TCATAAATGC TACTGCGGTG ACGTTTATCT      3360

AATTCAGTCA TCTTATCCCT CCCATTTCAG TTTTTACTAT TATAGCACAA TTTTTCGCATG     3420

AAGAACAGAA TAAAATTCTT GAATTTTCAG AAAATTCTAT ACACATGTGA AATATTTAAA      3480

ATTAAAAACA ACAAAGCGGA TTAGTGCACT TTCTGATGAC CAGAATATGC TTTTTAATCC      3540

GCTTTCTTTA AATAACGTAC TGTAATTTTT ACAGAAATTC TTTCAAATAA GTGTATTTAA      3600

CATCTATCTT GCATTATAAA TTTCTAGAAC CTTCTCTTTT ATATTCGATT CACTCAAACC      3660
```

743

```
ATACTCATTA AGAAGATAAT CCATTTTCCC TACTTGACCG AATCTTTCTT GAACACCCAT      3720

CCGATGAATT TTTGTTATTC CATCATCAGA GAATAATTCA CATAAAGCAC TGCCAATTCC      3780

ACCTATCTGA TTGTGGTTTT CTACAGTAAA TATAGTTTTT CCACTTAACA TTGTTTTTAT      3840

CTGTTCTGGT ATCGGTTTGA TTCTAAATAA ATCTATCACA CCTACTGAAT AACCTAATTT      3900

AGACAGTTCA TCTGCAACTC GAATACTTGG AGCAACCATT ATGCCAGAAG CAACGATTAC      3960

AAGATCTTCA CCATGCCTTA ACTCAATGTA GCCTTTAGAA AAATCTTCTC CACCTTGATA      4020

CACAGGAACT GGAGCTTTTC TAATTGTTCG AATATATTTT AGTCCTTTTA AGTCTAATGT      4080

CTGGTTCAAT ATTTCACGAA ATTGGATATC ATCAGTTGCT TCGAAAATGA TTGATTTAGG      4140

AATTAAACGT AACAATCCAA TTTCTTCAAA TGGCATATGT GTTCCACCAT TCATCTCTGC      4200

CGTTACTCCT GCATCTGATC CAATCACAGT GGCATCCAAT TGTGCGTATC CAAGAGAAAT      4260

AAATAATTGA TCAAATACTC TTCGTGAAGC AAAAGGACCA AATGTATGAA GATAAGGTCT      4320

AAACCCCTGA ATAGACAAGC CTGCTGCAAG GCCGACCATT TCTGCTTCCA TAATCCCAAC      4380

ATTCACATAA CGGTCTCCAA AGTCCTTTTC AAGATTATTA GTAGCCATCG AACTTGACAA      4440

ATCGGCTTCT AAGACTACTA TATCAGAATC ACTTTGATTA GCCTCTAAAA GGAAGTCTCT      4500

ATATACATGC CGTAATTCTT TCGTACTTCT CATCATTCTG TTTCCTCCAA TTCCTGACTT      4560

AATCTTTCTA CAACTGAAGT TAACATTTGT TTCTCCTCTA CAGTAGGGCG AAGATGATGA      4620

TTGGATTTCA TTTCTTCCAG CTCTTGAACC CCTTGACCTT TAATAGTATC TAATACAATG      4680

CACTTAGGTG ATGAATTATT TGACTGTTTT AATTGGACAA TCCCTTCATA AATTTCTCTA      4740

ATATCTGAAC CCTTGACCCT AATGGATTCA AATCCAAATG CTGAAAATTT TTCTACGAAA      4800

TCACCTGGAT TACAAATATC CTTTGTAAAA CCATCTAATT GTTTTTTGTT ATCATCAACA      4860

AATACAATTA AGTTGGATAA CTGTTGATGA GAAGCAAACT GTATAGCCTC CCAACATTGT      4920

CCCTCATTTA ACTCACCATC TCCAACAATA GCGTAAGTAT AAAAGGGACT CTTTCTTATT      4980

CTCTGACCAT ATGCAAGTCC AGTTGCAACA CTAATTCCTT GTCCTAAAGA GCCCGTTGTC      5040

ATATCTATGC CTGGCGTTAG ATTTCTATCA GGATGAGACG GTAATTTGGT TCCATTTGTA      5100

TTTAAAGAAT ATAAGAATTC TTTGTCAAAG AAACCATTCA AATAGAGTGT ACTGTATAGA      5160

GCTGGTCCTC CGTGACCTTT TGATAATATG AAATAATCTC TATCTCGTGC TGCAAATATT      5220

TCTGGAGTCA TTGGCATTAT TTCACCATAA AGCACCGCTA AAACTTCTAC GATAGACAGA      5280

CTTCCTCCGT AATGTCCGAA TCCAAGATGA TTCAATGTTC TAAGAGTATT TAATCGGATG      5340

TTAGTCGCAA ATTTTCTTAA CCCATCTTCT CTATTTTTAC TTAAAATCAT CCCTTATTCC      5400
```

744

```
TCCGTTGCAG ATGGCTTTTT AATAAAGGAT ACTCCAAACA TAACTGCTAG AATAAGAACA    5460
AGACCAATCA CAATGCCTGC TTGTGAGCCA AATTGATTTA ACATTCCTAA AATAATTCCT    5520
GATAGACCAA AATCTGCATC TGAGAAAGTT GATCCTTGGA AACCAAGTCC TCCCAAAACT    5580
GGCATTAAAA AGACTGGAAG AAAACTGATT AAAATACCTT GTAAAAATGC TCCAATAGTG    5640
GCTCCACGAA CACCACCAGA TGCATTCCCA ATGACACCTG CAGTCGCTCC ACAGAAGAAA    5700
TGAGGCACAA CACCTGGTAA GATAACAACC GTTCCTGAAG CAATCATAAT TACCATACTT    5760
ACTAAACCAC CAACAAAACT AGAGATAAAT CCAATTAGAA CTGCATTGGG TGCATAAGTA    5820
TAAACAATCG GACAATCCAA AGCAGGTTTT GAATTAGGTA CAAGACGCTC TGAAATACCT    5880
TTAAAGGCTG GAACAATTTC GCCCAAAATA AGGCGAACAC CTGCTAAAAT AACAAATACC    5940
CCTGCTGCAA ATTGACCTGC TAATTGTAAA GCATAAACTA GACCACTTGT ACCACTACTG    6000
ATTTCTTTTT CTATATATTC TGACCCTGCA AAGATAGCTA CAATAATGTA AATAACTGCC    6060
ATGGATAAAG TAATACTAAC AGTACTATCA CGTAAAAAAG CTAAACTCTT TGGAAATTTA    6120
ATGTCCTCTG TTGATTTTGA TTTGTCACCG ATAAGGCTAC CAGTAAAACC ACTCAACCAA    6180
TATCCCAAAG AACTGAAATG ACCTAAAGCT ACCTTGTCAT TTCCAGTTAA TTGAACCATA    6240
TATTTTTGCA CAAATGCTGG GGAAATACTC ATAATAATAC CGAGTGCTAA TCCTCCTAGT    6300
AAGATGAGAG GCAAGCTAGT AAAGCCAGCA ACTGATAAAA TGACCGCAAT CATACATGCC    6360
ATATATAGAG TGTGGTGCCC TGTTAAAAAA ATATATTTAA ATCGAGTAAA ACGAGCGATT    6420
AAGATATTGA ACACCATGCC TGCAAACATA ATCATTGCAG TAGCTGAGCC ATATGTTGTT    6480
AAAGCTACAG CTACAATTGC TTCATTATTC GGCACAACGC CAGATAAATG AAAAGCATGC    6540
TCAAACATGG TACCAAATGG ATTTAAAGAA TTTTGTACAA TTCCTGCACC ACCAGATACA    6600
ACTAAGAAAC CAACAAAGGT CTTAATTCCA CCTTTAATAA TATCAGGTAA TTTCTTCTTC    6660
TGAAGAACTA ATCCTAAGAT TGCAATTAAA GCTACTAAAA TAGCTGGTGT ACTAACAATA    6720
TCCAATATGA ACTTCATCAT GACGCTAGCC TCCTATATAA GTCCTTTTTC TTCACAAAGT    6780
TTAGTAATTA ATTCTCGTAG TTCATCCATA TCAATAATAC TATTTAAGAT ACGAACATCT    6840
CCAAGATGAC TAGCTGAATC AGCTAGATCA CGACCAACAA TCCAAATATC AGCTGCATTT    6900
GGATCTGCTC CACCTAAATC ATAATGTTCA ACTTCTACAT CCGAAACATT CAAATCACTC    6960
AATACAGATT CAATATTCAT CTGTACCATA AAACTTGAAC CTAATCCTGA ACCACAAGCT    7020
GTACCAATTT TTAACATTAT CTAATCCTCC TGTTTAATTA TCATTTTAAT GTCATCATAG    7080
TTTTTTGATG ATATTAAAGT TTGAACATGA TTTTTATCTC TTAAAATTGT TGTTAAATGT    7140
GACAAAGCCT TTAAATGACT CTCATTATCA ATGGCTGCAA TACAAATCAA CAATCTTACC    7200
```

745

```
TCTTGTTCTG GATTATCCAA TAAATAAATC GGTTCTTCCA AAACTAACAT TGACATTCCT      7260

ATTTCATTCA CACCTTCATC TGGCCGAGCG TGAGGAATTG CTACTCCCTT CCCTAAATTA      7320

ATAAAAGGTC CAAACTCTTC TACTTTTTGA ATCATTGCCT CAGGGTAGTT CTCAGTTATC      7380

TTATCTTGAT CCAAAAGCGG TTTAGCTGCT AAACGAATCG CCTCCTTCCA TCCTAATTTT      7440

TGCGAACTAA CCTGATAGGT TTCTTTGGTA ATAAGTTGTT CTAGCACTGG TACAATTTCC      7500

TTTCTATCAT TTTTTTGGTA AAGATAATTC TTTAACGCCA ATCTTAATTC CAATTCTTGT      7560

GTAATAATTC CATATCTTTT GACAATATTC AGGATTTGTT CAATCTCAAA ATCTCCATAC      7620

TCTAAATTCG GAAAATCTTT TAACACTAGT TCTACTAGTT GTATTGCTTG CTCTTCAGTC      7680

ATCATAACCG AAACTAGATA ATTTGGCTTT TCTGTCTCCA CCTTTATGGT AGAAAAAACC      7740

ATATCATAGT CACTACTAGC TTTCACCTGT AAATCATCAA TCTTTGAGGT TCCTATAAAC      7800

TCAATTTGAG GAAATAATGC TAATAGATTC TCTTTTAACA TCAATGAAGA ACTAACACCA      7860

TTAGGACAAA TGATTGCTGC TTTATACCAT TTTTGAGGCA AAGTATCTGC TTTCTTTAAA      7920

TAACCTCCGA AATGGATAAC AAAATATGCT GTTTCACTAT CAGGTATGGG ATTGTCAATA      7980

GCGTCCATCA AGGGCATCAA AGAATCTTTG ACTAATTCAA ATAAATCAGG ATAATGTTCT      8040

TTAACATGCA ATACATATTC ATTTGAACTA GGTAGGCCGA ACTTTAATCT ATAGTAAGCC      8100

GGTATAAGGT GGCGGCGAAG ATTTTCTCTC AATCCTTCCC TTTGTTTAAA ATGTAACAAA      8160

GAAATATCTT CCATTCTACT TATAATAGCC TCTGTTAATT GATTAAAGTA AACCCCACCA      8220

ACATCTACTT CACCTTCAAA GCAACTTGAT AATAAAACGG TGATATAGCG ATAATCATCC      8280

TCAGAAAACA CCGTATCTAT AATTCCCAAA TCAACCACTG TATCCAATAA AATAGTGGTT      8340

ATATCTTGAA TAACAGGAGA TACTAATGTC TCTGAAAGAC ATACTCTTTC AACATCCCTT      8400

TGATACCTAC ACAGAATGAA TACTAAACCG AAAAGGTAAA CTTTTAATTG ATTAACAATA      8460

GGTACTAGCT GTAGCTTCTC ATAATAATCT TTAACTACCT GATCAATCAA ATCATAAGTT      8520

AATGAATACC CCCAACTGGA TAAAACATAA TCCAAACCCC AAATCCCTAT GGAGGATTCC      8580

AGCAACTCAC TAACCATTTG AAAAGCTAAG CGGTGCTTAT TCCACTCTGA ACCGTGTAAA      8640

GTATAACCTT TTGCTCTACT GTACCCTAGC TCCAAATCAT TATCTAACAT AATCTTTCTT      8700

AATGATTGAA TATCAGATAA GGTTGTATTC TTACTTACTT TCAAAAAGTC TTGGTAATGA      8760

CTATTCGATA TAAAATCTAA TCGGCAAAAA GTGTAAAGAT AGATTAAAGC TAAGCGAGTC      8820

GACTTTGGTA AAACCAATTC ATCCGACTTA ATAATATCTG TCAAAGACTG CTTCGTACGA      8880

TTTGATAAAC TATAGCGACC TTGCTTTTTA TCCAGCACTA TCCCTTTATT AGCTAGATAA      8940
```

746

GGCACTAAAT AATCTATTCC TTCTTTGACT TCCTTTATAG GTAAGCTCAC CTTAACAGAT   9000

AATTCATATA ACGATAGCTC ACAATGATCC ATCAAAGTCA TCAAAATAAC TAGTGCTCTA   9060

TAATCAAAC   9069

(2) INFORMATION FOR SEQ ID NO: 98:

     (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 8654 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

CGAGACAACA AGATGAAGAA AAATTTGCCC TATCGTTTGT GGCGCTTGCA AGTGTAGCAC   60

TTCTTGCAGC CTGTGGAGAA GTGAAGTCTG GAGCAGTCAA CACTGCTGGT AACTCAGTAG   120

AGGAAAAGAC AATTAAAAATC GGGTTTAACT TTGAAGAATC AGGTTCTTTA GCTGCATACG   180

GAACAGCTGA ACAAAAAGGT GCCCAATTGG CTGTTGATGA AATCAATGCC GCAGTGGTAT   240

CGATGGAAAA CAAATCGAAG TAGTCGATAA AGATAATAAG TCTGAAACAG CTGAGGCTGC   300

TTCAGTTACA ACTAACCTTG TAACCCAATC TAAAGTATCA GCAGTCGTAG GACCTGCGAC   360

ATCTGGTGCG ACTGCAGCTG CGGTAGCGAA CGCTACAAAA GCAGGTGTTC CATTGATCTC   420

ACCAAGTGCG ACTCAAGATG GATTGACTAA AGGTCAAGAT TACCTCTTTA TTGGAACTTT   480

CCAAGATAGC TTCCAAGGAA AAATTATCTC AAACTATGTT TCTGAAAAAT TAAATGCTAA   540

GAAAGTTGTT CTTTACACTG ACAATGCCAG TGACTATGCT AAAGGGATTG CAAAATCTTT   600

CCGCGAGTCA TACAAGGGTG AAATCGTTGC AGATGAAACT TTCGTAGCAG GTGACACAGA   660

CTTCCAAGCA GCCCTTACAA AAATGAAAGG GAAAGACTTT GATGCTATCG TTGTTCCTGG   720

TTACTATAAT GAGGCTGGTA AAATTGTAAA CCAAGCGCGT GGCATGGGAA TTGACAAACC   780

AATCGTTGGT GGTGATGGAT TCAACGGTGA GGAGTTTGTA CAACAAGCAA CTGCTGAAAA   840

AGCATCAAAC ATCTACTTTA TCTCAGGCTT CTCAACTACT GTAGAAGTTT CAGCTAAAGC   900

TAAAGCCTTC CTTGACGCTT ACCGTGCTAA GTACAATGAA GAGCCTTCAA CATTTGCAGC   960

CTTGGCTTAT GATTCAGTTC ACCTTGTAGC AAACGCAGCA AAAGGTGCTA AAAATTCAGG   1020

TGAAATCAAG AATAACCTTG CTAAAACAAA AGATTTTGAA GGTGTAACTG GTCAAACAAG   1080

CTTCGATGCA GACCACAACA CAGTCAAAAC TGCTTACATG ATGACCATGA ACAATGGTAA   1140

AGTTGAAGCA GCAGAAGTTG TAAAACCATA ATAGAAAAAT GTTGAAATAG GGAATGAGCC   1200

TTTGACTCAC TCCCTGTTTC GATATTTAAT ACTCTTCGAA AATCTCTTCA AACTGCGTCA   1260

747

```
ACGTCGCCTT GGATTATATA TGTGACTGAC TTCGTCAGTC TTATCTACAA CCTCAAAGCA    1320

GTGCTTTGAG CAACCTGCGG CTAGTTTCCT AGTTTGCTCT TTGATTTTCA TTGAGTATAA    1380

GAACCTATCA AAAAGTGAGG GAAAACCCTC GGAATTATAA ATAGAAAGAG TGAATCTTAT    1440

GCTCCAACAA CTCGTAAATG GTTTGATTCT AGGTAGTGTT TACGCGCTGT TAGCCCTAGG    1500

ATATACCATG GTTTACGGAA TTATCAAGCT CATCAACTTC GCCCATGGTG ATATTTATAT    1560

GATGGGAGCC TTTATCGGTT ATTTCTTGAT CAATTCTTTC CAAATGAATT TCTTTGTAGC    1620

GCTTATTGTA GCTATGCTAG CGACAGCTAT TCTTGGTGTC GTGATTGAGT TTCTTGCTTA    1680

CCGACCTTTG CGCCACTCTA CTCGTATTGC TGTTTTGATT ACGGCTATTG GGGTTTCTTT    1740

CCTATTGGAG TATGGAATGG TCTATCTGGT TGGTGCCAAT ACCCGTGCCT TCCCTCAAGC    1800

GATTCAAACA GTTCGATATG ATTTGGGACC AATTAGCTTA ACAAATGTGC AGTTAATGAT    1860

TTTGGCCATT TCCTTGATTT TGATGATTTT GTTACAAGTC ATTGTCCAAA AGACTAAGAT    1920

GGGGAAAGCC ATGCGTGCAG TATCAGTAGA TAGCGACGCG GCGCAATTGA TGGGGATCAA    1980

TGTAAACCGT ACGATTAGCT TTACCTTCGC TTTGGGTTCT GCTCTTGCGG GTGCGGCTGG    2040

TGTTCTGATT GCTCTTTATT ATAACTCTCT TGAGCCTTTG ATGGGGGTTA CTCCAGGTCT    2100

TAAATCTTTC GTTGCCGCAG TACTTGGTGG TATCGGAATT ATTCCTGGTG CGGCTCTTGG    2160

TGGCTTTGTG ATTGGTCTAT TGGAAACCTT TGCGACTGCC TTTGGGATGT CAGATTTCCG    2220

TGATGCCATT GTTTATGGAA TCTTGTTGTT GATCTTGATT GTCCGCCCAG CTGGTATCCT    2280

TGGTAAGAAT GTGAAAGAGA AGGTGTAAAC GATGAAGGAA AATTTAAAAG TTAATATTCT    2340

ATGGTTACTC CTTTTGTTAG CTGGCTATAG CTTGATTAGT GTACTGGTTT CAGTCGGAGT    2400

ACTTAATCTA TTCTATGTAC AGATTTTACA ACAAATTGGA ATTAATATTA TTTTGGCTGT    2460

TGGTCTCAAC TTAATCGTTG GTTTTTCAGG ACAATTTTCA CTTGGTCATG CTGGTTTCAT    2520

GGCGATTGGT GCCTATGCAG CAGCTATTAT TGGTTCTAAA TCACCAACCT ACGGTGCCTT    2580

CTTTGGAGCT ATGCTTGTAG GGGCTTTGCT TTCAGGAGCA GTTGCCTTAC TTGTCGGCAT    2640

TCCAACCTTG CGCTTGAAGG GGGACTATCT TGCGGTAGCA ACTCTGGGTG TTTCTGAAAT    2700

TATCCGTATC TTTATCATCA ATGGTGGAAG CCTTACAAAT GGTGCGGCAG GTATCTTAGG    2760

GATTCCTAAC TTTACAACTT GGCAAATGGT TTACTTCTTT GTCGTGATTA CAACCATTGC    2820

AACCTTGAAC TTCTTGCGTA GCCCAATTGG TCGTTCAACC CTCTCTGTTC GTGAAGATGA    2880

AATCGCTGCT GAGTCAGTTG GGGTTAATAC GACTAAAATT AAAATCATCG CTTTTGTCTT    2940

TGGTGCCATT ACTGCAAGTA TTGCTGGGTC ACTTCAGGCA GGATTTATCG GGTCTGTTGT    3000
```

748

```
ACCGAAAGAT TACACCTTCA TCAACTCAAT CAACGTTTTG ATTATTGTTG TATTTGGTGG      3060

ACTCGGTTCC ATTACAGGTG CGATTGTTTC GGCTATTGTT CTGGGAATTT TGAATATGCT      3120

TCTCCAAGAT GTTGCTAGTG TGCGTATGAT TATTTACGCT TTGGCCTTGG TATTGGTAAT      3180

GATTTTCAGA CCAGGTGGAC TCCTTGGAAC ATGGGAACTG AGCCTATCAC GTTTCTTTAA      3240

AAAATCTAAG AAGGAGGAAC AAAACTAATG GCATTACTTG AAGTAAAACA GTTAACCAAA      3300

CATTTTGGTG GTCTAACAGC TGTTGGAGAT GTGACTCTTG AATTGAACGA AGGGGAACTG      3360

GTTGGATTAA TCGGTCCAAA CGGAGCTGGG AAAACCACCC TTTTCAACCT TTTGACCGGT      3420

GTTTATGAAC CAAGCGAGGG AACAGTAACC CTAGATGGTC ACCTTTTGAA TGGGAAATCA      3480

CCTTATAAGA TTGCCTCTTT GGGACTTGGA CGTACTTTCC AAAATATCCG TCTCTTTAAA      3540

GATTTAACAG TTTTAGATAA TGTTTTGATT GCTTTTGGAA ACCATCACAA ACAGCATGTT      3600

TTTACTAGTT TCTTACGCTT ACCAGCTTTT TACAAGAGTG AAAAAGAATT AAAGGCTAAA      3660

GCTTTGGAAT TGTTGAAAAT CTTTGATTTA GATGGTGATG CAGAGACTCT TGCTAAAAAT      3720

CTTTCCTACG GACAACAACG TCGTTTGGAA ATTGTTCGTG CCCTTGCTAC GGAACCTAAA      3780

ATTCTCTTCT TAGATGAACC AGCAGCAGGT ATGAACCCAC AGGAAACAGC CGAATTGACT      3840

GAGTTAATTC GTCGTATCAA AGATGAGTTT AAGATTACAA TCATGTTGAT TGAACACGAT      3900

ATGAATCTGG TCATGGAAGT AACAGAACGT ATCTACGTAC TTGAATATGG CCGTTTAATC      3960

GCTCAAGGAA CTCCAGACGA AATTAAGACC AATAAACGCG TTATCGAAGC TTATCTAGGA      4020

GGTGAAGCCT AATGTCTATG TTAAAAGTTG AAAATCTTTC TGTGCATTAC GGTATGATCC      4080

AAGCAGTTCG TGATGTAAGC TTTGAAGTTA ATGAAGGAGA AGTTGTTTCC CTTATCGGTG      4140

CCAACGGTGC AGGTAAGACA ACTATTCTTC GCACCTTGTC AGGTTTGGTT CGACCAAGTT      4200

CAGGAAAGAT TGAATTTTTA GGTCAAGAAA TCCAAAAAAT GCCAGCTCAG AAAATCGTGG      4260

CAAGTGGTCT TTCACAAGTT CCAGAAGGAC GCCACGTCTT TCCTGGCTTG ACTGTTATGG      4320

AAAATCTTGA AATGGGAGCT TTCTTAAAGA AAAATCGTGA AGAAAATCAA GCTAACTTGA      4380

AGAAGGTTTT CTCACGCTTT CCTCGTCTTG AAGAACGGAA GAACCAAGAT GCAGCCACTC      4440

TTTCAGGGGG GGAACAACAA ATGCTTGCCA TGGGACGCGC CCTCATGTCA ACACCAAAAC      4500

TTCTTCTTTT AGATGAACCA TCAATGGGAC TTGCCCCAAT CTTTATCCAA GAAATTTTTG      4560

ATATCATTCA AGATATTCAG AAGCAAGGAA CAACGGTCCT CTTGATTGAA CAAAATGCCA      4620

ATAAAGCACT TGCAATCTCT GACCGAGGAT ATGTACTGGA AACAGGGAGA ATCGTCCTAT      4680

CAGGAACAGG AAAAGAACTC GCTTCATCAG AAGAAGTCAG AAAAGCATAT CTAGGTGGCT      4740

AAAACAATCC AGTGGATTGT TTTAGTCGGC AGATGGAGAT TACGAAGTAA TCATCAATAT      4800
```

749

```
AGTCCGGGGG ACCTTTTTAG TCGGTAGATT GAGATTGCAA ACAAATCTGC ATCTACATTG      4860

AAAGCTTAAT TTCTAATAAT TGAAAAAATC GAATGAAAAA TTTCTTACCT TCATTCACAG      4920

AGCTCGATTT CAGAGCTCTT TTTGCTAGCT TATTCATACT TTTCTGAATT TCGAAAAAGA      4980

AATGTAAGCG TTTGATAGAT TTACAAAAAG ATTGTATAAT AGGGATAAGA ATAGAAAAGG      5040

AGAAGTCTCA TGGCAGTTAA AGATTTTATG ACCCGCAAGG TAGTTTATAT TAGTCCAGAT      5100

ATAACAGTAT CTCATGCAGC AGATTTGATG AGAGAGCAAG GTTTGCACCG TCTGCCTGTT      5160

ATCGAAAATG ATCAATTAGT TGGTTTGGTG ACTGAGGGAA CCATTGCACA AGCAAGTCCA      5220

TCTAAAGCAA CAAGTCTTTC TATCTATGAG ATGAATTATC TTCTGAATAA GACAAAAGTA      5280

AAAGATGTCA TGATTCGCGA TGTTGTCACT GTCTCAGGCT ATGCTAGTCT AGAAGATGCA      5340

ACTTATCTGA TGTTGAAAAA TAAGATTAGT ATTCTCCCTG TCGTAGATAA CCATCAAGTA      5400

TACGGAGTTA TTACTGACCG TGACGTTTTC CAAGCCTTTC TTGAAATTGC AGGTTATGGC      5460

GAAGAAGGGA TTCGTGTACG CTTTGTTACA GAAGATGAAG TTGGTGTTCT TGGAAAAATT      5520

GTTTCTTTGA TTGTAGAAGA AAATTTGAAT ATCTCCCATA CAGTCAATAT TCCGCGTAAG      5580

GATGGTAAGG TGATTATCGA AGTGCAAATC GATGGATCAA TTGATTTACC AGCCTTGAAA      5640

GAAAAATTTG AAGCAAATGG TATTCAAGTG GAAGAAATCG CTCGCACTTC AGCAAAAGTC      5700

TTGTAAGAAG GGAAGCCCAA AGGCTTCTTT TTTCATGAAA AGGGGATTAG AGCAAAAGAT      5760

GGAAAGAAAT GATAAAATAT GCTATAATGA AATAATGTAA AAAAGGAGTA TTTATGGACA      5820

TTTCAGTAAT TCGTCAGAAA ATTGACGCAA ATCGTGAAAA ATTAGCTTCT TTCAGGGGGT      5880

CTCTTTGACC TCGAAGGGCT AGAGGAAGAG ATTGCCATCT TGGAAAACAA GATGACAGAA      5940

CCTGATTTTT GGAACGATAA TATTGCGGCC CAAAAAACGT CGCAAGAATT AAATGAATTA      6000

AAAAACACTT ACAATACCTT CCATAAGATG GAAGAGTTGC AGGATGAAGT CGAAATTTTA      6060

TTGGATTTTT TGGCTGAAGA CGAGTCAGTG CATGATGAAC TGGTAGCGCA GTTAGCCGAA      6120

CTTGATAAGA TAATGACCAG CTACGAGATG ACTCTACTCT TGTCAGAACC TTATGACCAC      6180

AACAATGCCA TCTTGGAAAT CCATCCAGGT TCTGGTGGTA CTGAGGCGCA GGACTGGGGT      6240

GATATGTTGC TTCGTATGTA TACTCGTTAT GGTAATGCTA AAGGCTTTAA AGTGGAAGTG      6300

TTGGATTACC AAGCAGGTGA TGAGGCTGGT ATTAAGTCGG TAACTTTATC ATTTGAAGGG      6360

CCTAATGCCT ATGGTCTCCT CAAGTCAGAA ATGGGTGTTC ACCGCTTAGT GCGAATCTCA      6420

CCATTTGACT CTGCCAAACG TCGCCATACC TCTTTCACAT CTGTAGAAGT GATGCCAGAA      6480

TTGGATGATA CTATTGAAGT GGAAATCCGT GAAGATGATA TCAAGATGGA TACCTTCCGT      6540
```

```
                                                   750
TCAGGTGGTG CCGGTGGACA AAACGTCAAT AAGGTTTCAA CAGGTGTACG TTTAACCCAC        6600

ATTCCAACTG GAATTGTTGT CCAATCAACA GTAGATCGTA CCCAGTATGG AAATAGAGAT        6660

CGTGCCATGA AGATGTTGCA GGCTAAGCTC TATCAAATGG AGCAAGATAA GAAGGCTGCG        6720

GAGGTAGATT CTCTCAAAGG TGAGAAAAAG GAGATCACTT GGGGAAGCCA AATCCGTTCT        6780

TATGTCTTCA CGCCTTATAC TATGGTAAAA GATCACCGAA CTAGCTTTGA GGTTGCTCAG        6840

GTAGATAAGG TTATGGATGG GGACCTAGAT GGTTTTATCG ATGCTTATCT CAAGTGGCGA        6900

ATTAGCTAAG ATAGAAAGGA ACTCACATGT CAATTATTGA AATGAGAGAT GTCGTTAAAA        6960

AATACGACAA CGGAACAACT GCTCTACGCG GTGTTTCGGT TAGCGTTCAA CCGGGGGAAT        7020

TTGCTTACAT CGTAGGACCT TCAGGAGCAG GGAAGTCAAC TTTTATTCGT TCTCTGTATC        7080

GTGAAGTAAA AATCGATAAA GGAAGCCTAT CAGTTGCTGG TTTTAATCTG GTTAAGATCA        7140

AAAAGAAAGA TGTCCCGCTT CTACGTCGTA GTGTTGGGGT TGTCTTCCAG GATTATAAAT        7200

TGTTACCAAA GAAAACTGTC TATGAAAATA TTGCTTACGC TATGGAAGTA ATCGGGGAAA        7260

ATCGCCGTAA TATCAAAAGA CGAGTGATGG AAGTTTTGGA CTTGGTTGGA TTGAAGCATA        7320

AGGTTCGTTC TTTCCCAAAT GAACTCTCAG GTGGGGAGCA ACAGCGGATT GCGATTGCGC        7380

GTGCAATTGT AAATAATCCC AAAGTATTGA TAGCTGATGA GCCAACAGGA AATCTGGATC        7440

CGGATAATTC ATGGGAAATT ATGAATCTCT TGGAACGGAT TAACyTACAA GGAACAACTA        7500

TTTTGATGGC GACTCATAAT AGCCAGATTG TAAATACCTT GCGCCACCGT GTCATTGCCA        7560

TTGAAAATGG CCGTGTCGTT CGTGACGAAT CAAAAGGAGA GTATGGATAC GATGATTAGT        7620

AGATTTTTTC GCCATTTATT TGAAGCCTTA AAAAGTTTGA AACGAAATGG TTGGATGACA        7680

GTAGCTGCTG TCAGTTCAGT CATGATTACT TTGACCTTGG TGGCAATATT TGCATCTGTT        7740

ATTTTCAATA CAGCGAAACT AGCTACAGAT ATTGAAAATA ATGTCCGTGT AGTAGTTTAT        7800

ATCCGAAAGG ATGTGGAAGA TAATAGTCAG ACAATTGAAA AAGAAGGTCA AACTGTTACA        7860

AATAATGACT ACCACAAGGT ATATGATTCT TTGAAGAACA TGTCTACGGT TAAAAGTGTT        7920

ACCTTTTCAA GTAAAGAAGA ACAATATGAA AAATTAACCG AGATAATGGG AGATAACTGG        7980

AAAATCTTTG AAGGAGATGC CAATCCTCTC TATGATGCCT ATATTGTAGA GGCAAACACT        8040

CCAAATGATG TAAAAACTAT AGCCGAAGAT GCTAAAAAAA TTGAAGGTGT CTCTGAGGTT        8100

CAAGATGGCG GTGCCAATAC AGAAAGACTC TTCAAGTTAG CTTCATTTAT CCGTGTTTGG        8160

GGACTAGGGA TTGCTGCTTT GTTAATTTTT ATCGCAGTTT TCTTGATTTC AAATACCATT        8220

CGTATTACCA TTATTTCCCG CAGTCGCGAA ATTCAAATCA TGCGCTTGGT CGGAGCTAAA        8280

AACAGTTATA TCCGTGGACC GTTCTTGTTA GAAGGAGCCT TTATCGGTTT ATTGGGAGCT        8340
```

751

ATCGCACCAT CTGTTTTGGT CTTTATTGTT TATCAAATTG TTTACCAATC TGTCAACAAA   8400

TCGTTGGTAG GGCAAAATCT ATCCATGATT AGTCCAGATT TATTTAGTCC GTTGATGATT   8460

GCCCTACTAT TTGTGATTGG GGTTTTCATT GGTTCATTGG GATCAGGAAT ATCCATGCGC   8520

CGATTCTTGA AGATTTAGGT AAAATAGCTG CTTTTATGAG GAGATTGTAA AATCTCCTTT   8580

TTTGCTACAA GAGTTTTTGA AAAGAGATGC GCAGAAGAAA AGAGCTTCCA AAGAAGTCCC   8640

CCAGAGAAGA CTTC   8654

(2) INFORMATION FOR SEQ ID NO: 99:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 19718 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

TGTCGCGTCA AAATCATTAC TATGGCTATG TATAGCCCTT ACTATGACTT GGCTAAACAC   60

GTTCGCTTTC AAATTTCTAG GCTCAGGCTG AAACAGTCTC CCAGGCTGTT CACTCCCGAA   120

TGCTAAAATC GTTCTTGATC GCTTTCACAT TGTACAACAT CTTAGCCGTG CTATGAGTCG   180

TGTGCATGTC CAAATCATGA ATCAGTTTCA TCGAAAATCC CATGAATACA AGGCTATCAA   240

GCGCTACTGG AAACTCATTC AACAGGATAG CCGTAAACTG AGTGATAAGC GATTTTATCG   300

CCCTACTTTT CGCATGCACT TAACAAATAA AGAAATTCTT GACAAGATTT TAAGCTATTC   360

AGAAGACTTG AAACACCACT ATCAGATCTA TCAACTCTTA CTTTTTCACT TTCAGAACAA   420

AGACCCTGAG AAATTTTTCG GACTCATTGA GGACAATCTG AAGCAGGTTC ATCCTCTTTT   480

TCAGACTGTC TTTAAAACCT TTCTCAAAGA TAAAGAAAAG ATTATCAACG CCCTTCAACT   540

ACACTATTCT AATGCCAAAC TGGAAGCGAC CAATAATCTC ATCAAACTTA TCAAGCGCAA   600

TGCCTTTGGT TTTCGAAACT TTGAAAACTT CAAAAAACGG ATTTTTATCG CTTTGAACAT   660

CAAAAAAGAA AGGACGAAAT TTGTCCTTTC TCGAGCTTAG CTGACTTCAA CCCACTACAG   720

TTGACAAAGA GCCTAATTTC CATAAAAATT GACATGGAAA TTATAAAACC ATTACTAGTT   780

TAGTCCTTTT TGATAACGTG CCAATTCGGC TTGGTTCGCC CAAACATAGT GACCTGGACG   840

GATTTCTACC ATAGATGGCT TATCAGTCTC ATAGTCGTGT TGACTTGGAT CGTAAACCTT   900

CAAGACCTTC TTACGTTCCA AGATTGGATC TGGGATTGGT ACCGCTGAAA GCAAGGCTTG   960

AGTATATGGG TGAATTGGAT TGTTAAACAA TTCTTCTGTT TCTGCAACCT CTACAATAAC   1020

752

```
ACCCTTGTAA ATAACTGCGA TACGATCTGA AATAAAGCGA ACAACCGACA AGTCATGGGC    1080

GATGAAGAGA TAGGTCAGGC CGAGCTCTTT TTGGAATTTT TTGAGCAAGT TCAAGACTTG    1140

GGCACGTACA GAAACGTCCA AGGCTGAAAT TGGCTCATCT GCAATAACAA AGTCTGGTTG    1200

CATGACCAAG GCACGGGCAA TACCGATACG TTGACGTTGA CCGCCTGAGA ATTCATGAGG    1260

GTAACGAGTC AAGTGCTCAG CAAGAAGACC TACTTCACGG ATAATATTTT GAACTTTCTC    1320

TTTACGTTCT TCTTCATCCT TAAATAAACG GTGATTGTAA AGACCTTCAG AAATAATATA    1380

ATCAACAGTC GCACGTTCAT TCAAACTTGC GGCAGGGTCT TGGAAAATCA TCTGGATTCG    1440

ACGAATCAAT TCCGCAGCTT GTTCACGCGA TTTCTTACCA TTAATCTTTT GACCATCAAA    1500

AATGATATCT CCATTACTTG TATCATTTAG ACCGATGATA GCACGACCAA TAGTTGTTTT    1560

CCCACTACCG GACTCACCTA CAAGCGAGAA AGTTTCTCCC TTGTTGATAA AGAAGTTAGC    1620

ATTTTTAACC GCGACAAACT TCTTACTTCC TTCACCGAAG GAAATTTCTA AATCTTTGAT    1680

TTCTACTAAT TTTTCAGACA TTTCCTTCCT CCTAGTCAGC CAGATGGGCA AATCCCATTT    1740

TTTCACGGAT CTTATCATGG AGATTTGCAA TCACAGCTGG TTTTTCTACT TTCGGAGCAT    1800

CCTCATGAAG AAGCCAAGTT TTAGCCCAAT GTGTCTCTGA TACTGAGAAT TGAGGAGCTT    1860

TTTGTTCGAA GTCAATCTGC ATTGCGTAGT CAGAACGCAA GGCAAAAGCA TCCCCTTTCA    1920

GGTCAGTATA AAGTGACGGA GGTGTTCCTG GGATTGAGTA AAGATCCCCT TTATCATCAG    1980

CAAGCTGAGG CAAGCTAGAC AAGAGACTCC ATGTATATGG ATGGCGAGGG TCATAGAAGA    2040

CTTCCTCAAC CGTTCCATAC TCAACGATTT CTCCTGCATA CATAACCGCT ACCTTATCCG    2100

CAATACTTGC CACCACACCA AGGTCGTGGG TAATAAAGAT TGTTGTGAAA TGATACTCGT    2160

TTTGTAAAGA TTTTAGCAAA TCAATAATCT GAGCTTGAAT AGTTACATCC AAGGCAGTTG    2220

TTGGCTCATC ACAGATCAAG ACATCAGGTC GGCAGGCAAG GGCAATAGCA ATAACGATAC    2280

GTTGACGCAT TCCTCCAGAA TATTGGAATG GGTATTCATT AAAACGTCTA TCTGCGTCTG    2340

GAATGCCAAC CTTATTCATG TAGTCAATGG CCAATTCTTT CGCTTCTTTA GCTGTTTTTC    2400

CTTGGTGTTT TACAATAACT TCTGTAATCT GACTACCAAT TGTTTTAATG GGGTCCAAAC    2460

TAGTCATTGG GTCCTGGAAG ATAGTCGCAA TCTTAGCACC ACGAATTTGT TCCCAATCCT    2520

TGTGAGAAGA TAAAGCTGTC AAGTCCTGAC CACGGTAGTC AATACTACCT TGGGCAATAC    2580

GACCATTTTC TTCGAGCATA CCTGTGAAGG TCTTTGTCAA AACAGATTTA CCTGATCCTG    2640

ACTCACCTAC CAAGGCTAAT ACTTCTCCTT CGACTAGTTC AAGGGAAACG CCGCGAATGG    2700

CTGTCAATAC TTTGTCACGA ACGTCAAATT CCACGACAAT ATCGCGAGCA GTCAAAATTA    2760

CATTTTTTTC TTTTGTCATT TCTACTCCTA TCTATGTGTA CGTGGATCAC TAGCATCCGC    2820
```

753

```
TAAGTTTTGA CCAACTACGA AAAGGGACAA GGATACCAAG ACAAGGGTTG TCAATGGAAT    2880

CCAGAACAAG TAAGCATTGG TTGTTACGTT TTGTGAATAA TCCGAAATCA AACGACCCAA    2940

ACTTGGCACT GTAATCGGTA ATCCAAGACC GAAGAAAGAC AAGAAGGCTT CGTATGAGAT    3000

AAAGCTTGGA AGCATTTGAG TCATGGTTGT CACAATAACA GATACCAATT GAGGCATGAT    3060

ATTTTTGGCA ACAATCTTCA AGGTTGGTGT TCCCAAAGTA CGTGACGCCA AGTTGTATTC    3120

CAAGTCACGA TAGCGCAAGA TTTGCACACG GATCATGAAG GCAATACCAA TCCATGTTGT    3180

TACGCTCATG GCAAAAATCA GATTCCAGAA TCCAGCTCCG ATTGAGTAAG TCAAGACAAT    3240

AACAATCAAA AGAGGTGGGA TGTTTGAGAT GACGTTGTAA ACTTCCATCA TGACACGGTC    3300

AACTGATTTT GAAATACCCC AAATACCACC GACAAAAACA CCGATAACCA AGTTAATCAC    3360

TGTCGCAATC ACAGAAATGA GGATGGAGTT ACGAGCTCCG AACCAGACAC CGTCAAAGAG    3420

CGATTTACCG TTACTGTCAG TACCGAACCA ATGCTCCGCA TTTGGCTTGA TATAACGAAC    3480

ACTAAAGTCG TTTACCTTGC TGACATCATT GAAATCAAAC TTAGAAAACA TTGGGTAGAT    3540

GAAACTTATC AAAATGATGG CTACCAAGAT TCCCAACATG ACTACAGTTG ATTTTTTCTT    3600

CATAAATTGT TTAAACACTG ATTTCCAGTA AGAATATGCT GGCGCATCAA TAGTTTCAGA    3660

GGCAAAATCG TCACGTTTTA CAAACTGAAA TTTTTCTTTA TCGATTGTAG ACATTATTTG    3720

CCTCCTTTCT CAGTCAATTT AATACGTGGG TCAATAATAG TCATCCAAAT ATCTCCCAAA    3780

AGACGTGAGA AGATAGAAAT ACATGTAAAG ATGAAGACAA GACCAACGAC CATAGAGTTA    3840

TTAGATGCTT TTACAGAGTC AATCAACATT TTACCCATAC CTGGGAAGGC GAAGACTGTT    3900

TCAGTAAGGG TTGCACCACC GATAACCCCA ATAATGGCAG CAGGAATTCC TGAAACCAGC    3960

GGAACCATGG CATTTTTAAA GATGTGTTTG TTTGAAATTT CTTTTTCAGA CAAACCTTTT    4020

GCACGAGCGA AACGAACAAA GTCTTGAGAT TGCAAGTCAA TCATGTAACG ACGAATCCAA    4080

ATGGCTGTAC CAGGAGCACC CAACAAACCA AGGATGACTG CTGGTAAAAC GTAAGAACGC    4140

CAATCTCCAG CTCCCAAGAT AGGGAATGAA TCTGGAAGGG CAATAGATGA TCCAATCAAT    4200

CGAACGATGT AAACCAAGGC AATCGTTGGA AGAGCAAGCA AGAAGGTCAA AGCCCCTGTT    4260

GAGAGGCTAT CAATCCAAGT GTTCTTGAAA CGAGCCATGG CTGAACCAAG TGGCACGGCA    4320

AGAGCATAGG CAAGAACCAA ACCAATCAAA CCAGTAATAG CAGAGCTGAC AATCATAGAT    4380

GGATATTGGT AATTACTTTC AGTCGCTGTA TAAGGATCAT CTTTCCCATA GCTAGCTACT    4440

TCACGAGAGT CAGCCTGACT AGGTGACTTG TAGGTTCTTG AGTAAATATT TACAGAAGAC    4500

GTTTTCTTAC CTGTTGGGAA CTGAACTTGG GCAGTTTTGG TTTGTCCTTG ACCTTGAGTA    4560
```

754

```
ATAACCTGAA GAACTGGTGT ATTAGCATAG GTTGGGTAAG AGTCACCTAA ATTCAAGTTC    4620

ACAAAGTTTT GATGAACAAA TGGGAACTGA CTGTTAAAGT ACAAGAGATA TTTATGTTTA    4680

GTTCCTGAAC CGACCAATGA CCATCCGATA GCTGGATCAT TTTCAAAACG AAGGTAGCGT    4740

TTCAAGTCTG GATTTTCAGG GTCTTGGATT TTATTTGTAT GGTCAATGTC AATCAAGTTA    4800

GCATAGAAGT GAAAAACACG TTCAAAAATT GGAATTTCAC GAGTAGCATA GAATTGACCA    4860

CTTTCAGTAA ATTCTCCCAA AGTCCAACCA TGACCTAATT GATTGATGTA CTTTTCATAA    4920

ATAGCTTTAT TGGTCGCATT TGCTTCTACT GTTACAGAAG AATCCATGCT ACTTGCCTTT    4980

TCTTGCAACT CTTTAGTATC GTAATACTCA ATGTAGCCCA TACGCTCAAA CACAGTATTT    5040

TCATAGTTAT CACGTTTATC AGCCGTTGTC GCAATTTTAT TATAGTTAGG ATCCTGCTTG    5100

AAAATCAATT TTCGAGGAAC CAAGGTATAG ATAATCGTGT AGGTCAAAGT CGTTACTAAG    5160

AAAATCGAAA CCAATGACCG CAAAACACGC ATAAAAATAT ATTTTTTCAT ATTATTTCCT    5220

TTAAAAATCC CAAAAGAACC TTCTCCTCAT GGAGAGAAAG TTCTATTAGA AATTATTTAC    5280

TTCACATGAC TTGCCAATTC TTTTTGAGCT TTCTCATTTG ATTCAGCTTT TTCTTTCAAC    5340

CATTTTTCAC GAGCTTTTTC ATACTCTTCC TTAGTCACCA CTTTATCTTG TGATTTCAAA    5400

TATTTGAAGT AAACATCTGA CCCCTTAGAG CCTGTTTGCG CAGAAGCTCC AGTAAATGGA    5460

ACAATTCGTG AAAGCACTGG TGCTGCACCA GAAGAAGCCA TAGCAGGAAT AAAGAGTGAA    5520

CTATCTGTCA ACCATGCTTG AGCCGCTGCA TATTTTTCAT AACGGACATT CAAGTCGCTT    5580

GTCTCTCTGG CAGCTTCATC AACTAATTTA TCGTATTCTT TCAAACCAAC TTGAACTACT    5640

GAAGGGCTAT TTGGATTATC AAATCCTAAA TATGTTTTTG TAGTTTCACT GCTAGTTGTT    5700

TTTAAAATAT CCAGGTAAGT AGATGGGTCT TGATAGTCTG GCCCCCATGA AACTCCTCCT    5760

GATACATCCC AATCCTCAGA TGAAGCATTG GCAGCATAGT AAGTAATATT AAGGAATTCA    5820

TCACTTGTCA TTTGTTGAAT ATCAACAACG ACATTTTCAA CACCAAGAAC TGTTTCTACA    5880

GATTGTTTAA AGGACTGAAT ACGAGATATG TAGTTTTTTG ATGCTTGGTC TACTGGAACG    5940

TCCAGATGAA TAGGAAACTG AACGCCGTCT GCTTCTAAAG CTTTCTTAGC TTTCGCAAAC    6000

TCTGCCTTGG CCTTGTCAGC ATTGAATAAA CCATCCTGCC CATCAGCTAA ATTCACACCT    6060

TTCCACTCAT CACCATAAGC AGGAAGTTGA GCAGCGACTA AATCACCAAA GGTCTTCTCA    6120

CCAGCTGAAA CAAAGTCTGG TTTTACAAAT AAATTACGAA CTGCTAAAGC TGCTCCATCT    6180

TTACCATTGA TTTGAGCTGA GTAAGCTGAG CGATCAAGAG CAAAATTCAA GGCTTGACGG    6240

AAATCTTTGT TAAGCAATGC CTTCTTAGTA GCTACTTTCT CTGAATCTGT AGTTTTAGAA    6300

GTATAGTTGT AACTTTGGCG ATCAATATTC ACACCCAGAC CAGCAATCCC AGAGCCTGAT    6360
```

755

```
TGTGTGTAAT AGATATTGTC CTTGTATTCT TCTGCAACCT TAGAATAGTT GGAGCTGGTA      6420

GGGTAAAGAC GGGCATAACT ATAAGCTCCA CTAGTGAAGT TACGCTCTAG CGACTCCTGA      6480

TCTGATCCAT CATAGTAAGC TAGATTGATA GTATCTAGGT GGACATTTTC TTTATCCCAA      6540

TATTGCTCAT TTTTTACAAA CTCTACAGAA GATTTTGCAG TCAACCCTTT CAACAAGAAT      6600

GGACCATTAT AAAGCAAGGA TGTCGGATCT GTTGGTTTAG CAAAATCGCT TCCTTTTGAT      6660

GTTTCGAATT CTTCATTCAG AGGCCAGAAA ATAGAATAGG TCAACTTAGA GTTCCAGAAC      6720

GGTTCAGGCT GGTTCAAAGT GTATTGTAAC GTATAATCAT CAACCGCCTT GACACCAACT      6780

GTTGAAAAAT CTGTTGAAGT TCCTGATAGA TAATCTGCCA AGCCTTTAAC CGAATTTTCA      6840

GCTAAATACA TAGCTTCTGA TTTTTTATCT GCTGCGTGTT TTAAACCGTT CACGAAATCT      6900

TTAGCCGTCA CCTCTGCATA TTCTTCTCCA TCAGAGGTAA ACCATTTAAC CCCTTTACGA      6960

ATCTTATAAG TGTAGGTCAA ACCATCCTTA GAGACTTCCC AATCCTCTGC AACTGCAGGA      7020

GCAAGATTAC CGTAATTATC GTTAGTGAAT AAACCATCAA TCCCATTTGA AGTCACTACT      7080

GTTGTACTAT TTTTACTTGA AATCAGGTAG TCCAAGGTTT CTGGGTCTGC TGTATAAACA      7140

TAGCCATAAG CTTTAGGGGC TGATGAATCA GATGATTTTG AAGAACTGCA TGCTGCAAGT      7200

ACACCTGCTG CTAATAAAAC AAGACCTGCT GTAGCAAATA CACGATTTTT TTTCATTTTC      7260

TACTCCTCTG TTTATGTGAA TTATAGATTG ACAACCATTA TATCACATTA TCCATTAAAA      7320

ATCAAACAAA TTTTCAGAAT ATTTAGGCTT GTTGGCACAA ATTTTTCATT TTTTTTGAAT      7380

ATATGATTCA AATTGTCGTT CGAAGTGTCA AAGACTACAG TGAAAATAGG AAATTTGACG      7440

CAGAAACTTT GGAGTTTAGG AAGACATACA GTAAAATGAA ATACGGACGG AACAATGTGA      7500

TTTTGGAATT CAAATTAAAT TATAACAATA TTGTAGAAGT ATCATTCTAG TATTCAAGAT      7560

TCAGTTTACT ATGTCTTTTC ACACCAACCT TATCCCGAAT TCAATTACTT TTGTGATTTA      7620

CATATATAGA TTAAGACTAT CTTTTATACT TTAAAATTTC TCGCTACCTT ATCCACTATA      ⬤7680

TGCTCCTCGC TATCACGTTT CTATTCATAG CCTACGATTT CACTATTGCT TTCTCTGACA      7740

ATTCTTATTT CCTGCGTCAG ACTTAAAACG ATCTATCCCC AGACCATTTT AATCCGCTAC      7800

CTCACGATAG TCAGGCTTGG GGAGCGCTAT TGTATTCACC GGTAGTGGAG CCCTACAGAG      7860

GACTTACACC TCAGATGCAC GACATGCCCA TCGTATAAAA AATCTCCTAC CCAAGGTAGA      7920

AGATTTCAAA CTTATAAAAC TTAATCCGTC ATGTCCGATA CCAACATTCG ATGCTCCAAT      7980

GGAATACTGC ACATAACTAG CAAGAAAATA AAGCCTGACT GAATCCAGAA GAGAGCCAAG      8040

TCAAAAATTC CGTGCACAGC AACCACTGTA AGGAAAGATA GATAAAGGCC GATAATCGGA      8100
```

756

```
CGTTTCCCCG ACTCCTGACT CATATCCATC ATCAAGCGAA CAGGAGCAAC AGAAGACAAA      8160

ACTAATAAAA TAGTCCCCAC AATTCCGTAA CTCAGAATCG TATCAATATA AAGACTGTGG      8220

GCATGTTCAT GATAAGGAGC ATGTATCCGA GGATAAGAGT TCATATAGGT CAATGGCCCT      8280

TCACCCCAAA AAGGATTTTG CTTAAACAAG GCCATCCCAG CATCCCAGAT AGAAATGCGT      8340

TCTTCCATAG AAGAGTCTAA AGTACCCATT CGAACTCCCA AATCACTAGA AAAGAGGAAA      8400

CTCAAACCAA TCGCGAAGAC CCCAATACTA AGCCAAAAGG CCTTCCAGTT TTTAATAGTC      8460

GTAAAGAGAT AGATAATTGC TCCAGCGATA ATAGCAGGAA AGGCAGTTCG ATTTTGAGTA      8520

AAGTTCAAAC CAAAGAGATT AACAAAGCCT GCAATCACAC AGAATACTTT CAACCAATTC      8580

AACTTGGTCG TTGTAAACAG ATAGAAAGCA ATCATAATAC AGAAACAACA AATAATTCCA      8640

TAATAATTAG GATTAAAGAA GGTCACTTCT GCCCGGTTCT GATGCCACAC CTGCATATTG      8700

GGTGAAAGAA AAGCATAGTT AAATTTCTTC ACAATTTGGA AATGTTCTAA ACTGGCAAAA      8760

GCAGCTGACA AGACACTACC AAACAAGACA AACTGCAAAA TCAATCGAAA GAATTTATGG      8820

GATAAAATCG ACTGATAGTG CAAAAAGAAA ATAGTAAATA GAAACATTCC TACTGAAGCC      8880

ACAAGACCCA TCCAATTTTG TGCAAGAATG GATATAACAG TACTATAGCT AAGAAAAAGA      8940

AGCAGCATCG GATGCTCCCC CATTTTCTGA AGAATACTTT TCATGTCTCC TGTAAAAATC      9000

AAACTGATAA TATATAAACA GAGTACAACT ACAAAAAGAT AAAAGGGTAA AAAGATACTC      9060

AGGATAATTC CCAATAAAAT CAGCTCTTTA CTAGACAACC CCTTCAGCTT TTCAATAAAG      9120

CCTATTGATT TCAAAATGAA TCCTTTCTCT CCAAATCAGC TGATTCAGAT AATAGTAAGC      9180

TATCCTATAT TGTACCACTT TTTTAGCAAT TTGAAAACAA AGGAAACGTT TTCCAAAATA      9240

AAAACCCTAT TTTATCCACC ATATCAAGGC TTCAAAATGA TACTTCAACT CCATTCTCAA      9300

TTACCCGATA AGTCTGATTT TGCAAATCAA TTTCTACTAC TGCTGTTACG GACTTATCTT      9360

TATTTTGACG TTTGATTACA ATGCTGTGAG CTGTTGGTGT CTCTATCTCA GTAGTCCCTT      9420

CTAGATCAAA GGCTTCTGAA CGGTTACGGA AAGAAAATAG ATTGAGAAGG GCCTTCACAA      9480

CAGGTCGTTG CACTTCTTTT GCTATTTCCT CGTTGCTATA GTAATGACGA TTAATATTTC      9540

GACCTTCTTT AGTTTCTTCT AATAATTTCA AGTCATTCTT GCCTGCTAAT AGACCCACAT      9600

AGTAAATCTG AGGAATACCT GGGGCAAAAG CTTGAATTAG ACGAGCGAGA AAATACTTGA      9660

CATCATCATC TCCAAGCGCT GAATAGTAGG TTGAATTGAT TTGGTAGATA TCTAAGTTGT      9720

TATACTCGGC ACTAGAGTAC TTACGTTTGA CATTGGCTCC AACCTTATAG AGTTCATTTG      9780

AAGCATAGTC AATCTCCTCA TCGGTCAGGA TATCCTTGAC ATCTACTACT CCAATCCCAT      9840

CATGGGTATC TAGCGTCGTA AATTGCTTCA TCGGGCTCAT CTTTAACCAC TTAGCCAAAC      9900
```

757

```
GCTCTGTTCT GGAACTGTAA AGAGTATAAA GTGTCACCAT TGGAAGAGCA AAATCATAAA    9960

CATAGTAATC ATGGTCTGCT ATTTTAAACT GAATCGAATA GTGTTCATGA ATCTCAGGTA    10020

AAAGCTCTGT CCCATACTCA GCAGCGATAT CTCGAACTTT GTCCAATAAA TCCCAAATAT    10080

CTGGTTCCAC AAAGAAATCA TTAGTATCCA ATTTCTTCAC TGCATAAGCA AAGGCATCTA    10140

GACGAATCAA ATCACACCCA TTACTTGCCA AGTGCTGAAT GGTCTTACGG ATAAATTCCA    10200

TAGTTACTTC TTTGGTCACA TCAAGATCAA TCTGCTCCTC ACCAAAGGTA TTCCACAAAT    10260

GTTCCACTGA ACCATCTTCA AACACAATCT CTTGCTTTGG TGCACGATCC TTACGCTTGT    10320

AAATTAAATC TACATCAGAC TGTGTCGGAC GGTTTTCTGG CCAAAACTTA TCCCAGTTTA    10380

AAAAGAGAGC TTTAAATTCA CTGGCTTCAT GTTTTTCTTG ATAGTCCTTA TAATACTTGG    10440

ATTGACGAGA AATATGATTA ATCATAAAAT CAAACATAAG ATAATATTTC TCACCTAAAC    10500

GCTTCACATC CTCCCAATCA CCAAAAGCTG AGTCCACTTC GTCGTAGTCA ACTGGCGCAA    10560

ATCCACGATC AACTGTTGAT GGGAAAAATG GTAAAAGGTG AACTCCTCCA ATAGCATCTC    10620

CAAAATGCTC TTCCAAATTA TCATATAAGT CTTTAAGATT ATTTCCAAGG CTATCAGAAT    10680

AGGTAATCAA CATGGTTTTA TTTTGAATTG GCATCATTAC TCTCCTTTTT CTAATTGAAG    10740

CCAAGTCTCA TATGATCTGG CTTCATAAAT AAAATTCATT TTAAATCTCT ATTTATCATC    10800

AAACTCGTAC TAATATAGAC TGTGATAAAC AAAGTACTAC TTTCTTGTTT TCTGCATAGA    10860

ATTATCAACA AGCTAAACTC TTCCTCTGTG TCAAAGACTA TAGATTCCAT GAGCTCTTCT    10920

TATACTCTTC GAAAATCTCT TCAAACCACG TCAGCTTCAC CTTGCCGTAG GTATGGTTAC    10980

TGACTTCGTC AGTTTCATCC ACAACCTCAA AACAGTGTTT TGAGCAACCT GCGGCTAGCT    11040

TCCTAGTTTG CTCTTTGATT TTCATTGAGT ATTACTTCAC TGCCCCGTTG CTCATTCCTG    11100

AAATGATATG GCGTTGGAAG AAGAGATAGA CAATGGTGAT ACTGATAATG CCGACCACGT    11160

AAGAGGCAAA GCTTGGTCCG TAGTCGTTGA AATATTGGCC TGCGTAGTTG TATTGGAACA    11220

AAGGCAGAGT CCACATTTTG GAATCCCGGT TCAAGACAAG GAGTGGCAAC ATGAAGTCAT    11280

TCCAGAACCA AAGGGCATTG ATGATCATGG TTGTCGCATG CATCGGTTTC ATCATTGGGA    11340

AGATGATGCG GAAATAGGTT GTAAATTGAT TAGCCCCATC GATCTCTGCT GCTTCATCCA    11400

GACTTTCTGG AATCGAGATT TTGATATAGC CAACATAGAG AAAGAGGGTC TGTGGAATCG    11460

CATAGGTCAA GTAGAGCAAG ATCAAACCAA AGGTATTAGC CAAACCGAGT TTACTCATCA    11520

TAACCGTAAT CGGAATCATG ATGACTTGGA AAGGTACGAA GATTCCGAGG ATTAAGAGGG    11580

TATACATGAT GGTAAAGGCT TTTCTTTTAC TCATATTGCG AGCGATGGAG TAGGCTGCCA    11640
```

758

```
TAGGGATAAA GATCATTACT GCAAGTAAAG ACAAGACAGT GATGACGACA GAGTTCCAAT    11700

AATAGCCTCC AATCCCATCA GCTAAGAGAC GGCTAAAGTT GTCCCATGTG AAGTTGGTTG    11760

GAAAGCCAAA GAAATTATCT ACAATATCCT TAGTGGGTTT GAAGGAACTA AAGAGGGTAG    11820

CAAGGAGCGG CACTAAAATC AGAACCGATC CTAGAATCAA TAGAATGTAT TTGCCAATCA    11880

GGGCTTTTCT TTCATCTTGT TTCATCATGC TTCTCCTCTT AAATTTCAAA TTTCTTAGAT    11940

ACTCTCAATT GGATGATCGA AATCACTACA ATTAAGAAGA ACAAGATTAC GGCAATGGCA    12000

TTGGCATAAC CGAATTGGTT GTTTTTAAAG GCATAGTTAT AAACCAAGAG CCCAAGTGAG    12060

GTTGTGGCAT TGTTTGGACC ACCACCGGTC ATGGCAAAGA CTTGGTCAAA GGCAGTCAGC    12120

CCACCTTTTA GGGCTAGGAT AAAGACCATA GAGACACTTG GTAGCAAGTA AGGCAATTCA    12180

ATGTTCCAGA AAACTTGCTT GCTAGTCGCA CCATCAATCC TTGCTGCCTC TGTAATCTCA    12240

GTTGGAATAG ATTGCAAACC AGCTAGGAAG ATGATGATGG GCATAGCCAC CCCTTGCCAA    12300

AGAAGGACAA AGACAGCCGC AAAGATTGCT CCCCACTTAG TCCCTAAAAG ACTGGTTTGG    12360

AAAAATTCAA TATGAAGGGC ATTTCCAATC GCTGGAAGAC CGTAGTTGAA GACTTGCTTG    12420

AAGATCAAAG CCACTGTCAA ACCAGATAAA ACAGCTGGGA AGAAGAACCA AGCACGGAAG    12480

AAGGTTTGGC CTTTGATTTT AGAATTCAAG ACACGCGCAA TGAAGATCCC GAGTGCAATC    12540

TCACCAACCA CCATGGCAAT CGCAATGATT GCGGTAAAGC CAATCGCATT CATGAATTTT    12600

GGATCCATGA AGAGGAGCTT AAAGTTGTTT AAGCCAACAA ATTTGTAGTT ATAAGTCAAT    12660

CCTGTCCAGT TGGTAAAACT GTAAAAGGCC CCTTGAAACA TCGGCACATA GAAGAAAATT    12720

GCTTGTAACA AGAGGGGGAT GACCACAAAA GCCCATGCCC AATATTTTTG TAATACTTTT    12780

TTCATAGTCT CTCTACTCCT AATCCACATC CGCTTTCATC GGGTTAAAGA AGGCATTCAA    12840

ATCATTGACC ATGCCTTGTT TATCACCGGT CAAGACATAG TTCATGGTCA AGGTATGGAA    12900

GTCTGCTTCA CTGGTCCAGT ATTGTTGCAA CCAGACCAAG TGACGATCCG TAAAGGCATA    12960

TTCGGTCATA CCAGCAAGCG GTGAATCTTC TCCTGCTTGT TTGACCCCTT CGATCGCTGT    13020

TGGAGATCCG TCCACATCGT AGTATTTTTG CATGACTTCT GGACGGGTCA TATATTCCAC    13080

AAAGGCATTG GCTTCTTTTG GATGTTTGGT GGTGGCTGAG ATAGACCATG CCAAGTCTCC    13140

CGCACCAACG GTTAAGCTTT GTCCTTTTTC TTTTCCTGGA ATCATGAAGG TCCCAATCTT    13200

AAAGTTCGGT TTTTGTTCAT TAATCGCTGT GATCGCCCAA GACCCATTTG GTGTCATGAG    13260

GACATCCCCA CGTGCGAAGG CTCCGATAAC ATCGGTATAG CCAGCACCTT CCCAGTTCTT    13320

TTGCTTAGAT CCATTGATGC GAAGGATGTC CATGACCTTG ATATCATCTT TCATAATCGG    13380

ATCCGACAAT TTAATGGCAT TTGGTTGAGA ATAACGAAGG TATTGATTTG CTTCTTTTCC    13440
```

759

```
TCCACCTGTT GCTGTCGCAA AGGCTAATTG ATTGTAACCA TTGAGTGTCC AAGCATCTGC    13500

ACCTGCAATT CCAAATGGTG TTTGTCCTTT AGCAACGATA TCTTTGACTA ACTGTTCAAA    13560

TTCATCCCAG GTTTCAGGAA CCTTCAAGCC CAGTTCTTCG AATTTATCTT TGTTGTAGTA    13620

AATTCCATAA GCATTAGCTG TAAAAGGAAC GTTGTAAACT TTTTCGTTTA CAGCATATTT    13680

TTCAGCGTAG CCATTTTTCA CGCGTTTCAG GTAGTCTTTG TTGCTCAAAT CTTCAAAAAC    13740

ACCTGCTTTT GCCCATTCTT GCAGTTCGAT GGACTGTGGG TAAATATTGA CCACATCAGG    13800

CACATCTCCT GCGAGAACGC GTGTCTTCAA TACTTCACCA GCATTTGGTA CATTGACGAC    13860

TTTGACCTTG ATCTTAGGGT TTTCCTTCTC AAAATCACGA GTGATTTCTT CCAAGGTTTT    13920

GGTCATTTCT TTTTTCTGGT TGAAATACTC GATGGTCACT GTGCCATCCG CAGATTTACC    13980

ATAGTTGGAG CAAGCGCCGA GCCCAAACAA AGCTAAACCT GTAGTTGCAA GAAGTCCGAT    14040

TTTTTTATAC CATTCCATTA GAAAGCCTCC TTTATAAATT TATACACCCT TATTGAACTG    14100

CACCCCAAAA GTTAGACAGA ATAAATCTAA CTTTTGGGGT CAGTACATAT CATAGTTTTC    14160

TAAAAATATA CTGTCTACTC AAAAAATCTC CTTGGGATAA GATAACAGTT AAGCCCGCAT    14220

ACATTAGTTC TGCACCTGAG TAAACTTCGC CATTTTCCTG TAATTTATAT AGTCCCTCTT    14280

CATCCAAATC TTTTAATTTT AAAGTTGTTT CCATGGTCTC TACAACAGAT AAAACGCGAA    14340

CGTAGGTTAC AATCGTTTGA TTTCCGTAAT TAAATTGTAC AGCTGCTTCA TTGGATACAG    14400

TATCAGGATT AATTAGTCTA TACTGCTGTC CTAACTGAAC TACTGGTCGT AATTCTTTAT    14460

ACAAGTTCAC CTGATTAGCA ATCGTAGCTT TCTCTTCATC TGATAAATTT GTCAAATCAA    14520

GTTCATAGCC CAAATTTCCC ATCATTGCTA CAAGGCCACG TGTTTCTAAT GGTGTCATTC    14580

GTCCCATCTG ATGATTCGGT ACTGCTGACA CATGAGCCCC CATAGAAATG GTTGGATAGA    14640

GATAGGATGA ACCGTATTGA ATTGGTAAAC GTGCAATGGC ATCAGTATTA TCACTAGCCC    14700

AGACTTGTGG GAAATAGCGC ATCATACCAA GATCATTTCG TCCACCACCA CCAGAGCAGG    14760

ACTCAAAGAG AATATGGCTG TGCTTCTCTG TCAGATAAGA AACGAGTTCA TAAAGCCCCA    14820

GCATGTACTG ATGAGATTGC ATCTGTGTCT CTAGATAAGT TAATCCATTC CCTAGCTTAG    14880

TGATATTGCG GTTCATATCC CATTTAATGT AATCAATATC ATGATAAAAT AGGAGTTGAT    14940

CTAAGACACT TTTCAAGTAT TCTACTACCT GAGGATTGGC AAGATTAAGT ACTAATTGAT    15000

TCCGAGAATA AGTATGCTCA TAGCCAGGAA CCTGAATAGC CCAGTCAGGA TGTTGACGAT    15060

ACAAATCACT ATCTACAGAA ATCATTTCGG GTTCTAACCA AAGTCCAAAC TGCAAACCTC    15120

TTTCATGGAT AGCTGAAATC AGACTTTCTA GACTTCCACC CAGTTTTTCC TCATTAACAA    15180
```

760

```
CCCAATCACC TAAAGCACGA TTATCATCAA AACGATTGCC AAACCAACCA TCATCTAATA      15240

CAAAAAGTTC AATGCCAACT TTCTTAGCTT CATCTGCTAA CTCTAACAGT TTTTCTCTCT      15300

GAAAGTCAAA GTAAGTAGCT TCCCAGTTAT TGATTAGAAT TGGACGTTCT TTTTTAGAAA      15360

ATTCACTTAG CATAATGTGC TTCAGTACAA AATTCTGACT TTCATGACTA ATACCAGTTA      15420

ATCCCTGATC TGAATGAGTC ACTAAAGCTA CCGGTGTTTC AAAGTATTCC TCAGGAGCTA      15480

ACTTCCAAGA AAAGTTTTCT GGATTAATGC CAATAGCCAC CCGAACTTCA TTCAATTGAT      15540

TTTTTTGAAC AAAAGCTTCA AAGTTGCCAC TATACATTAG TTGAATAGCA AACACATTCC      15600

CAGCATCCTC TGTGACTCCT TGTTCGCATA GTAGAAGAGC TGGTGTTTGA GCATGACCAG      15660

AAGCACCTCG GTTTGAACTA ATCGAAAAGA TTCCTTGTTC TACCTGTTGA CGTCTAACAG      15720

TCTTTTCACG AGCATAAGCA CCCTGCGAG TTACTATTTC GTAATCTGCA GCTGGAAAAT       15780

CAGCCATAAA AGAAAAATCT TTATGGATGA CAACTTCCTG ATTACTATTA TTATCTAATT      15840

TACTGTAGCT AGCAATAGTC GCATCATTAT TAAAAGTAGT ATAATACAAA GTCAGACTAA      15900

GTTGAGCCTT AGAATCTTCT AACATTAAGA CAAGAGTCTC TGTATCGTCC ATGCTATGTG      15960

GAGAAGGTAA GCCCTGTGGA CCATTCTGAC CTTTTAAAAT CTTTGCTTCT ACAAATCGAA      16020

AGTCTGTTAC TTCAGTTACA CTATGCTGAA CCTGTATGGT TGGTTTCCTA AAATCTCCTA      16080

AGCCATGTTG TCCAAAAATC TGTCGCTGAG TATCTAAACT AAAGGTTCGA TTAGTAGCCG      16140

TTGGATTTCC TGAAAAGGCA TGGTCTCGTT CATAAACACT ATTGGAACCT TTATAGTTCT      16200

TAATAGTCTT TCCTAAATGT TTCAAAAGTA AGTAGCCATT TCGATTTTCA ATAATCAAAC      16260

TTAGATTTTT ACTCTCAACA TAAAATAGAT TATTCTCTAT CCTAACTCCC ATTTACTTCA      16320

CCTCATCACT TTATTGATTA TATTTTATCA CCTGAAATCG CTTTCCAAAA TAGAAAAATG      16380

TCTCAAGAAT ATGGTAAAAT GTTAGGTAGG AGGTAGCACA TGTTAGTTTT TTCAGAATAC      16440

CAGACTGGAA CAATCGACCT TGCCCTAAGC TTTTATGGAT ATGAGGAATG CACACCTAAT      16500

TACTCTTTTG GTCCAGCCAT TCGTGATACA TACGTTCTAC ATTACATTAC TAAAGGACAA      16560

GGAAAATTTC ATTACAAGGG TAAAATTGTT GATTTAAAAG AAGGAGATTT CTTTCTATTA      16620

AAACCAGAGG AACTAACCTT TTATCAAGCA GATAGTAAAG AACCTTGGGC CTACTACTGG      16680

TTAGGAATCA CTGGAGGGAA AGCCCCTGAT TATTTTGCTC TTTCCCAAAT TTCTGATCAA      16740

TCCTATCTCA TCCAATCTGA AACTTGTCAT ACCCAGACTA CTGCAAAACT CATCTCAGAC      16800

ATTGTCCGCT TCGCTCAGAT TACAAAATCA AGTGAATTAG CTCAACTCCA TATCATGGGA      16860

CAACTTCATG AACTGATGTT TCATCTGGGA ACTATTGCTC CCAATCAGAA AAAAAAGAAT      16920

ATTTCATCAA CCCACCAACT CTATCTTGAA TGCAAACGAT TAATTGATAG CCACTATCCT      16980
```

761

```
CAATCACTTA CAATTCAAGA TTTAGCAAAA GAACTATCCG TTCACAGAAG CTACTTATCA    17040

AGCGTATTCA AAGAATTTAA TACCTTATCA CCCAAAGAAT ACCTACTCTA CGTTCGAATG    17100

CACCGAGCTA GACAACTTCT CGAAAATACC CAAGAGTCCA TCAAGGTAAT TGCATACTCG    17160

GTAGGTTTTT CAGATCCACT CCATTTTTCG AAAGCTTATA AACAATACTT TAATCAGACT    17220

CCAAGTCATA CAAGAAAAGA ATACTCTCAA TACCAACTAG TAAGAAAGGC AACATTATGA    17280

AATCCTACCA AGCTGTCTAC CAAATCCTAT CTAAAGAAAC CGACTATATC AGCGGAGAAA    17340

AAATCGCAGA AAAACTATCC CTAAGCCGAA CAGCAATTTG GAAAGCCATC AAGCGACTAG    17400

AACAAGAAGG CATTGAAATT GATAGTATCA AAAATAGAGG ATATAAACTG ATGAATGGTG    17460

ACCTTATTCT TCCAGAGATT CTAGAAGAAA ATCTTCCAAT TAAAGTCAGC TTTAAACCCG    17520

AAACAAAATC AACACAACTA GATGCAAAAG AAGCAATTGA TTTAGGCCAT GAAGCAAATA    17580

CCCTCTATCT AGCTTCCTAT CAAACAGCAG GCCGAGGCCG TTTTCAACGT TCCTTCTACT    17640

CACCACAAGG TGGTATTTAT ATGACACTCC ATCTTAAACC AAATCTCCCC TATGACAAAT    17700

TACCATCCTA CACACTACTT GTAGCTGGAG CTGTCTACAA AGCCATTAAG AACCTAACTT    17760

TAATAGATGT CGACATAAAA TGGGTCAATG ATATCTATCT AAACAATCAT AAAATTGGAG    17820

GAATCCTTAC TGAAGCAATG ACCTCTGTAG AAACTGGCTT AGTCACAGAT ATCATTATTG    17880

GAGTAGGTAT CAATTTCACT ATTAAAGACT TCCCTCAGGA ATTAAAAGAA AAAGCTGCCA    17940

CCTTATTTAA AGCTACAGCT CCTATAACAA GGAATGAATT GATCATAGAA ATCTGGCGTG    18000

CTTTCTTCGA AACACCAGCA GAAGAGCTAT TATACCTATA CAAAAAACAG TCATTCATTC    18060

TAGGAAAAGA AGTCACTTTC ACACTAGAGC AAAAAGACTA CAAGGGACTT GCTAAAGACA    18120

TCTCAGAAAA TGGAAAACTT TTAGTTCAAT GTGATAACGG AAAAGAAATC TGGCTAAATA    18180

GTGGCGAAAT TTCTCTCAAT AGTTGGAAGT AAAATAACAC AATTATAATA TAAACGATAT    18240

AAAAATAACT TCAGATTAGT AATTCAATTA AGTTTTACGG ATCTGAAGTT TTATTGGCTC    18300

TAAAAATAAA AAAGAGAGTT ACAGACTCTC ATTAAAACGG AGAATAAGGG ATTCGAACCC    18360

TTGCGCCAGT TACCCGACCT AACGATTTAG CAAACCGTCC TCTTCAGCCT CTTGAGTAAT    18420

TCTCCAATTA ATGGGCACGA GTGGACTCGA ACCACCGACC TCACGCTTAT CAGGCGTGCG    18480

CTCTAACCAC CTGAGCTACG CGCCCAAGTT AAAAAACTTG GTAATTTGAA CAAAGTTCAA    18540

AGCGGGTGAC GAGAATCGAA CTCGCGACAA CAGCTTGGAA GGCTGTAGTT TTACCACTAA    18600

ACTACACCCG CATAAATACT ATCAATAAAA TGGCGCGAGA CGGAATCGAA CCGCCGACAC    18660

ATGGAGCTTC AATCCATTGC TCTACCAACT GAGCTACCGA GCCTTATTGC GGGAGCAGGA    18720
```

762

```
TTTGAACCTA CGACCTTCGG GTTATGAGCC CGACGAGCTA CCGAGCTGCT CCATCCCGCG    18780

TTAATAATAT AAAAGGAGGA TGTGGGATTC GAACCCACGC ACGCTTTTAC ACGCCTGACG    18840

GTTTTCAAGA CCGTTCCCTT CAGCCGGACT TGGGTAATCC TCCAATATTC AAATGGACCT    18900

TGTAGGACTT GAACCTACGA CCACTCGGTT ATGAGCCGAG AGCTCTAACC AGCTGAGCTA    18960

AAGGTCCGAC AAGATCATTA TAGCGGCGAA GGGGATCGAA CCCCCGACCT CCCGGGTATG    19020

AACCGGACGC TCTAGCCAGC TGAGCTACAC CGCCATGAAT CGGGAAGACA GGATTCGAAC    19080

CTGCGACACC TTGGTCCCAA ACCAAGTACT CTACCAAGCT GAGCTACTTC CCGAGTTAAA    19140

TAGAAAAATG CACCCTAGAG GAGTCGAACC TCTAACCGCC TGATTCGTAG TCAGGTACTC    19200

TATCCAGTTG AGCTAAGGGT GCTCCATATT ATGCCGAGGA CCGGAATCGA ACCGGTACGA    19260

TCGTTACCAA TCGCAGGATT TTAAGTCCTG TGCGTCTGCC AGTTCCGCCA CCCCGGCCTC    19320

TCTAAGCGAA CGACGGGATT CGAACCCGCG ACCCCCACCT TGGCAAGGTG GTGTTCTACC    19380

ACTGAACTAC GTTCGCACTG TTTTCTTCTA TCTAAAAATG CCGGCTACAT GACTTGAACA    19440

CGCGACCCTC TGATTACAAA TCAGATGCTC TACCAACTGA GCTAAGCCGG CTCATTTGTT    19500

ATATCTTAAT GCGGGTTAAG GGACTTGAAC CCCCACGCCG TTAAGCGCCA GATCCTAAAT    19560

CTGGTGCGTC TGCCAATTCC GCCAAACCCG CATATATGAC CCGTACTGGG CTCGAACCAG    19620

TGACCCATTG ATTAAAAGTC AATTGCTCTA CCAACTGAGC TAACGAGTCT AAAATAACTT    19680

GCGTTACCTT AAACGGTCCG ACGGAATCGA CCCGGTAC                           19718
```

(2) INFORMATION FOR SEQ ID NO: 100:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 4117 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

```
CCGTGGAAAA GTCTGGATAG TGAATGGTCT TCACACAATG ACCTGAAAGA AGCCTGAGAA      60

TAATTATGGA GAGTAGCATT CTGAGAGGTG TTAGCAGAAC CATATGACAG AGCTGTTTGA     120

AGAGGGAATA TTGAGGAGAA AAATCCTGAG CCTACCAGTT GGAGTTGGAA AGAGCTGACT     180

GTTAGATCAT GGTTTATTAT CCACAACCTG TGGATAACTT TGTGAATAAG AGAAGTTGCT     240

AAAGAAGGAG ATATATAACG ATGAAGAAAA TCAAACCGCA TGGACCGTTA CCAAGTCAGA     300

CTCAGCTAGC TTATCTGGGA GATGAACTAG CAGCTTTTAT CCACTTCGGT CCTAATACCT     360

TTTATGACCA AGAATGGGGG ACTGGACAGG AGGATCCTGA GCGCTTTAAC CCGAGTCAGT     420
```

763

```
TGGATGCGCG TGAGTGGGTT CGTGTGCTCA AGGAAACGGG CTTCAAAAAG TTGATTTTGG      480

TGGTCAAGCA CCACGATGGC TTTGTCCTTT ATCCGACAGC TCACACAGAT TATTCGGTTA      540

AGGTCAGTCC TTGGAGGAGA GGAAAGGGCG ACTTGCTCCT TGAAGTATCC CAAGCTGCCA      600

CAGAGTTTGA TATGGATATG GGGGTCTACC TGTCACCGTG GGATGCCCAT AGTCCCCTCT      660

ATCATGTGGA CCGAGAAGCG GACTACAATG CCTATTATCT GGCTCAGTTG AAGGAAATCT      720

TATCAAATCC TAACTATGGG AATGCTGGTA AGTTCGCTGA GGTTTGGATG GATGGTGCCA      780

GAGGAGAGGG CGCGCAAAAG GTTAATTATG AATTTGAAAA ATGGTTTGAA ACCATTCGTG      840

ACCTGCAGGG CGATTGCTTG ATTTTTTCAA CAGAAGGCAC CAGTATCCGC TGGATTGGCA      900

ATGAACGAGG GTATGCAGGT GATCCACTGT GGCAAAAGGT GAATCCTGAT AAACTAGGAA      960

CAGAAGCAGA GCTGAACTAT CTTCAGCACG GGGATCCCTC GGGCACGATT TTTTCAATCG     1020

GAGAGGCAGA TGTTTCCATC CGTCCAGGCT GGTTCTACCA TGAGGATCAG GATCCTAAGT     1080

CTCTCGAGGA GTTGGTCGAA ATCTACTTTC ACTCAGTAGG GCGAGGAACT CCACTCTTGC     1140

TTAATATTCC GCCGAATCAA GCTGGGCTCT TTGATGCAAA GGATATTGAA CGACTTTATG     1200

AATTTGCGAC CTATCGCAAT GAGCTCTATA AGAAGATTT GGCTCTGGGA GCTGAGGTAT      1260

CTGGTCCAGC TCTTTCCGCA GACTTTGCTT GTCGCCATTT GACAGACGGC CTTGAGACCA     1320

GCTCTTGGGC AAGCGATGCA GACTTGCCCA TCCAGTTAGA ACTCGACTTA GGTTCTCCTA     1380

AAACTTTTGA TGTAATTGAG TTAAGAGAAG ATTTGAAGCT AGGGCAACGA ATCGCTGCTT     1440

TTCATGTGCA AGTAGAGGTG GATGGTGTCT GGCAGGAGTT TGGTTCGGGT CATACTGTTG     1500

GTTACAAACG TCTCTTACGA GGAGCAGTTG TTGAGGCACA GAAGATACGT GTAGTCATTA     1560

CAGAATCACA GGCTTTGCCT TTGTTGACCA AGATTTCCCT TTATAAAACT CCTGGATTAT     1620

CAAAAAAAGA AGTTGTTCAG GAACTAGCAT TTGCAGAAAA AAGCCTAGCT GTGGCAAAGG     1680

GAGAAAATGC CTATTTTACA GTTAAGCGCA GAGAATGTAG TGGTCCTTTA GAAGCTAAGA     1740

TTTCGATTCA ACCGGGGACA GGTGTCCATG GTGTCGCCTA TCAGGATGAG ATTCAAGTCC     1800

TTGCGTTTCA AACTGGTGAG ACTGAAAAAA GTCTGACGCT ACCAACCTTG TATTTCGCAG     1860

GAGATAAAAC CTTGGATTTC TATCTGAACC TAACGGTGGA TGGTCAGCTT GTGGATCAAC     1920

TTCAAGTCCA AGTTTCATAA AAGAAGAACC TTTGCGCGAT GCAAAGGTTC TTTTGGTTAT     1980

TAGTGACTTG GTAACCAGCT GAGGGTGAAA GTTAGTTGTT CAGCTTTTAA GAGGTCTTGG     2040

TGTTGAATAG TTGATACGAG TGTTTTGTCC AGTCGGCATT CTTTGACAAA GTTAAAATGG     2100

TTGTGGTTTT GTTTAGTATG GATATCCAGC CATTTATCTT CTTTAGCGAG GTAGACTCGT     2160
```

764

```
AGATGGTCAA AGAGAGGGAT TCCGAGGTCA TAGCTTGGTT TTCCTGGACA GGTTGGATAA       2220

AATCCGAGAG CTGACCAGAT GTACCAAGCA GAGAGACTAC CATTGTCTTC ATCTCCAGGA       2280

TAGGCTTCCC AACTTGGGTG AAAAGCTTTC TGACGGAGCG TCTTGATAAG AAGGGCAGTG       2340

TAGTCAGGGT AATCGCTGTA ACGGAAGAGA TAAGGAATGT GGAAACTAGG CTGGTTGGAA       2400

ATGGCTATTT GTCCAAAAGG AGCAGTAGCC ATCTCGCTCA TTTCGTGAAT TTCGTAACCA       2460

TAGCCTGTTG TTTCAAAGAG GGGAGCATCT TGACAGGCTT TCAAAAGATA GTTGCTAAAG       2520

GTTTCTTTTC CACCCATCAG TTGGATTAAG CCAGGGATGT CGTGGAGAAC GCCTAAAGTA       2580

GCTTGAATGG CAGAGCATTC AGCGTAGTCT CGCCCCCAAC TATAAGGAGA GAAGTCAGGG       2640

TGAAAGTTTC CTTGATTGTC TCGTGCTCGC ATGTAACCTG TCTCAGCGTC AAATAGCTGG       2700

CGGTAATTTT GTGAAGCAGC CTTGTAGGTT TCAGCGATTT CTATGTTCTC TAGTTTTTTG       2760

GCACAGCTGG CGATACAAAA GTCACTATAG GCATAGTCTA GAGTATGGCT AACACTTTCG       2820

TGGTGGTCGG TAGAGAGGTA ACCTAGTTCT TGGTATTGGG CTAGTCCGTG GCGGCCATTG       2880

ATGCCGAGAG GGTCGGCTTT GCTGGCTGTT TCGAGCATGG CTTGGAAGAG TTCTCCTTCT       2940

AGGTCGGGGG TCATGTCCTT GCAGGCGCTA TCTGCGATAA TACCGTCTAA AAGTGTACCT       3000

GGCATCATAC CCCGTTCATC TGGAGCCAGC CATTTTGGAA GGAAACCAGT ATCGCGGTAG       3060

CTATTGAGGA AACCTTCTAA AAAGCGTTGA TAGTGCTCCG GTATGATAAG GGCAAAGAGG       3120

GGGAAGGTGG TGCGGAAGGT ATCCCAGAAA CCATTGTTGC TAAAGAGGAC ACCAGGCTTG       3180

ACAGTACCAG TAGCCAGATC CATGTGGATG GCTTGCCCTG ATTCATTAAT CTCATAAAAA       3240

GTCTGTGGGA AGAGGAAGAG TCTGTAGAGG CAGTGGTCAA AGAAGGTTCG GTCAGCCTCT       3300

CCTGTCTCTA TAATGTCAAA ACGATGGAGG AGATTTTCCC AATCCACTTG GGCACTTGAT       3360

TTACAGCTAT CAAAATCTTC TTGAGGTAGA TTGATTAGAG CTTGAGAAGG AGAGATGAAA       3420

GAAGTGGCTA GTTGCATCTC GGTTTGACTA CTTGCTAAGT CAATTCGCCA GTCTCCAGCT       3480

TCTTGGCTGA TAGCAAGAAT ATCCGTGTTC ATTTGCAGGG CAGTGAACAT CGTTAGCGAA       3540

TTTTTGTTAG TTTCAGTTTT ACCTTCTTGT CGCAGGGCAA GAGTCCGCTT ATCTACTTGC       3600

TCTACTGTCA GTTCATCTGC TGCGTGAAGA TAGAGGGAGA GGGCTTTGCC TTGCTTTTGA       3660

TTCAAACGAA TAGAAGCACC ATAGCAAGTC GGTGTGAGCT GGGTTTCAAT CTGATAACGC       3720

AGAGAAAAGA GCTTCAAATA GTGAGGCTGG AAGCAAGCTT TATCTATATC ATAAGAAGAC       3780

TGGCGGTGAA AGAGGCTGTC TCCCCCCAGT TGACTGGTGA CAGGTGTCAG AAGGAGCCAA       3840

GAGTAGTCCC CAATCCAAGG ACTGGGCTGG TGAGTTAATC GAATCCCCTG AAAGATAGGC       3900

AGATGTGGAT CAAAAAACCA AGATCCATCC TGGTCACTGG TCTGGGGCAC AAAGTAATTC       3960
```

765

```
ATCCCAAAAG GCACGCCTGT GTATGGCAGG GTATTTCCCC GAGAAAAGGC ATGCTTGTTG      4020

GTAGTTCCAA AACGGGTATC GATGGTATCA AGTAGTGGTT TCATAGTCTT TCCTTTAGCT      4080

GTTTTTCTAC ATTATATCAG TAATAGAGGG CCTTTAG                               4117
```

(2) INFORMATION FOR SEQ ID NO: 101:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2727 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

```
CTGGTTCAAT TATTATTCAC TCTAAGTAGT CATATGTTCT TTATTTATGT GAGTTTTTAC       60

CTTTTAAAGG ATCTTGTTAG ATGGGAGAAG GTTTTAAAAG TGACAGATGA TAATACAAGA      120

AAAGTTCGTT TATTAGTAGC CTTTTTTAGC ATTGTCATAG GCTACATCCT GAGTTCTTTC      180

TTTATTAGCC TGTATCATTT GTGGCAAGAA GCGCTTAGAG GATTATTATG AAATCAAGAG      240

TAAAGGAAAC GAGTATGGAT AAAATTGTGG TTCAAGGTGG CGATAATCGT CTGGTAGGAA      300

GCGTGACGAT CGAGGGAGCA AAAAATGCAG TCTTACCCTT GTTGGCAGCG ACTATTCTAG      360

CAAGTGAAGG AAAGACCGTC TTGCAGAATG TTCCGATTTT GTCGGATGTC TTTATTATGA      420

ATCAGGTAGT TGGTGGTTTG AATGCCAAGG TTGACTTTGA TGAGGAAGCT CATCTTGTCA      480

AGGTGGATGC TACTGGCGAC ATCACTGAGG AAGCCCCTTA CAAGTATGTC AGCAAGATGC      540

GCGCCTCCAT CGTTGTATTA GGGCCAATCC TTGCCCGTGT GGGTCATGCC AAGGTATCCA      600

TGCCAGGTGG TTGTACGATT GGTAGCCGTC CTATTGATCT TCATTTGAAA GGTCTGGAAG      660

CTATGGGGGT TAAGATTAGT CAGACAGCTG GTTACATCGA AGCCAAGGCA GAACGCTTGC      720

ATGGTGCTCA TATCTATATG GACTTTCCAA GTGTTGGTGC AACGCAGAAC TTGATGATGG      780

CAGCGACTCT GGCTGATGGG GTGACAGTGA TTGAGAATGC TGCGCGTGAG CCTGAGATTG      840

TTGACTTAGC CATTCTCCTT AATGAAATGG GAGCCAAGGT CAAAGGTGCT GGTACAGAGA      900

CTATAACCAT TACTGGTGTT GAGAAACTTC ATGGTACGAC TCACAATGTA GTCCAAGACC      960

GTATCGAAGC AGGAACCTTT ATGGTAGCTG CTGCCATGAC TGGTGGTGAT GTCTTGATTC     1020

GAGACGCTGT CTGGGAGCAC AACCGTCCCT TGATTGCCAA GTTACTTGAA ATGGGTGTTG     1080

AAGTAATTGA AGAAGACGAA GGAATTCGTG TTCGTTCTCA ACTAGAAAAT CTAAAAGCTG     1140

TTCATGTGAA AACCTTGCCC CACCCAGGAT TTCCAACAGA TATGCAGGCT CAATTTACAG     1200
```

766

```
CCTTGATGAC AGTTGCAAAA GGCGAATCAA CCATGGTGGA GACAGTTTTC GAAAATCGTT    1260

TCCAACACCT AGAAGAGATG CGCCGCATGG GCTTGCATTC TGAGATTATC CGTGATACAG    1320

CTCGTATTGT TGGTGGACAG CCTTTGCAGG GAGCAGAAGT TCTTTCAACT GACCTTCGTG    1380

CCAGTGCGGC CTTGATTTTG ACAGGTTTGG TAGCACAGGG AGAAACTGTG GTCGGTAAAT    1440

TGGTTCACTT GGATAGAGGT TACTACGGTT TCCATGAGAA GTTGGCGCAG CTAGGTGCTA    1500

AGATTCAGCG GATTGAGGCA AGTGATGAAG ATGAATAAGA AATCAAGCTA CGTAGTCAAG    1560

CGTTTACTTT TAGTCATCAT AGTACTGATT TTAGGTACTC TGGCTCTAGG AATCGGTTTA    1620

ATGGTAGGTT ATGGAATCTT GGGCAAGGGT CAAGATCCAT GGGCTATCCT GTCTCCAGCA    1680

AAATGGCAGG AATTGATTCA TAAATTTACA GGAAATTAGG CTGGAGAACC AGCCTTTTTC    1740

TAAAGATAAG GAGAAATATG AACAAAAAAA CAAGACAGAC ACTAATCGGA CTGCTAGTGT    1800

TATTGCTTTT GTCTACAGGG AGCTATTATA TCAAGCAGAT GCCGTCGGCA CCTAATAGTC    1860

CCAAAACCAA TCTTAGTCAG AAAAAACAAG CGTCTGAAGC TCCTAGTCAA GCATTGGCAG    1920

AGAGTGTCTT AACAGACGCA GTCAAGAGTC AAATAAAGGG GAGTCTGGAG TGGAATGGCT    1980

CAGGTGCTTT TATCGTCAAT GGTAATAAAA CAAATCTAGA TGCCAAGGTT TCAAGTAAGC    2040

CCTACGCTGA CAATAAAACA AAGACAGTGG GCAAGGAAAC TGTTCCAACC GTAGCTAATG    2100

CCCTCTTGTC TAAGGCCACT CGTCAGTACA AGAATCGTAA AGAAACTGGG AATGGTTCAA    2160

CTTCTTGGAC TCCTCCAGGT TGGCATCAGG TCAAGAATCT AAAGGGCTCT TATACCCATG    2220

CAGTCGATAG AGGTCATTTG TTAGGCTATG CCTTAATCGG TGGTTTGGAT GGTTTTGATG    2280

CCTCAACAAG CAATCCTAAA AACATTGCTG TTCAGACAGC CTGGGCAAAT CAGGCACAAG    2340

CCGAGTATTC GACTGGTCAA AACTACTATG AAAGCAAGGT GCGTAAAGCC TTGGACCAAA    2400

ACAAGCGTGT CCGTTACCGT GTAACCCTTT ACTACGCTTC AAACGAGGAT TTAGTTCCCT    2460

CAGCTTCACA GATTGAAGCC AAGTCTTCGG ATGGAGAATT GGAATTCAAT GTTCTAGTTC    2520

CCAATGTTCA AAAGGGACTT CAACTGGATT ACCGAACTGG AGAAGTAACT GTAACTCAGT    2580

AAAAGATACG CCTACACTCC TATGTCACTT ATGGATGTAG GAGTTCTTTT TACTAGTTTA    2640

AGCAGGACTA AGACAGGTAC TAAGACAAAA TAGCAACTTC TAAAACTAAC TTCCAGTTTT    2700

GGGAGAGAGA TGGAAGTTAC TTTGAGA                                        2727
```

(2) INFORMATION FOR SEQ ID NO: 102:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 5717 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

767

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102:

```
TTTTTTGTAG ATTTAAGTGG GGTGCAATTC CTAAAAAATA AAAAACAATT TTTGAAAATT        60

ATGTTAGCAG GAATTGCTTC AAATTCGATT TTATCACTTA CAGGTTTACT TGTTTTATTG       120

TTCACATCGT ATAAATTGCT TGGACTCTTA TTTTTTATCA TTAACTTAGG TATGATTTTT       180

ATTAATTCAA TTCCTTTTTT TCAGTATGAT AGTGGTATTA TTTTAAGATA CTTGAATTCT       240

AACAATAATA ACTTGAATTT TCAATATATA GTTCAACTTT TAATAGCATT TGTTATTATT       300

TATTTTCCTT TGAGTCAACT ATTACAGTTT TTGACACCCA ATATTATTGT TCGTAGTATA       360

GGAGGGGTGG TTGTTTCTAT ACTGCTTTCT ATATTATATA TGATAGGAAG GACGAAATAT       420

GTTCTACGTA AATAGTTATG TTTTTGCTTA TAAAAAAGAA GGTATAATGT ATTTACGTGG       480

TCGGAGTATG CGGGAAATAG CTATAGAACC TCAAATTTCG CAAGAATTTA TCAACGATCT       540

ATTTAATAGT TGTAAGGAAC TATTAGAGAT AGAAGAAGTA TTAGGCAGTA AACTAACATT       600

TGAACTATAA ATGAACAAAT TTTAATTTCG GATGAGATAG ATATTGATAG TAGATATTCT       660

AGAACTAAAG GTTACTATTC GTTATTTTAT AATGAAGAGT ATAATAAAAT ACAGAATAAA       720

ACAGTATTAG TATTAGGAGC AGGAGTCTTA GGATGTTATA TATCTCTAAG TCTAAGTATG       780

TATGGAGTGA GGAAACTTAT TGTCGCTGAT TACGATATAA TAGAACCATC AAATTTAAAT       840

AGGCAAATTC TTTATACAGA GTCGGATGTT GGTAAGGAGA AGATTAATGT TCTTTCTGAA       900

AAAATACACA AGTATAATTC AGATGTTCAG GTAGTACCTA TTTCTATTAA AGTTTCTTCA       960

GTAGAAGAAT TAGAAAAAAT TGTTGCGGAA TATGGGAGTA TAGATTTTAT CGTTAAAGCA      1020

ATTGATACGC CCATTGATAT TATAAAAATT GTCAATCAAT TTGCTGTATC GCATAAGATA      1080

TCCTACATAT CAGGAGGGTT TAATGGATGC TATCTTATTA TTGATAATAT ATATATCCCT      1140

ACCATCGGTT CTTGCTTTGG TTGTCGGAAT ATAAACAAAG ATATAAATAA GTACACTTTA      1200

TCTGATAAGA CAAAGTGGCC GACTACACCA GAGATGCCTG CTATTTTGGG AGGGATAATG      1260

ACTAATTTAA TAATTAAAAT ATTTCTGGGA TGTTATAATG AAATCCTAAT AGATAACGCT      1320

TACGTTTATA ATATGAGAAA TCATGCTCTA AGTCAAGAAA AATATGTTCT GGAAAACGGA      1380

GAATGTCCAA TTTGTAAAAA AATAATAAAG TGAAAGATAA CAATATTAGA GCGAAAACAT      1440

TTATTCGTTC AGTTTGTTTT TGCTTATTAT CAGGAGGAGT AGCTTTTTTA TCTGCTATTG      1500

GGCAGTTCAC TGTTATAGAA ACACAATTAA TAGTATTGTT CTTGGGTATT ATTTTTGCTA      1560

TATATTATGC TTACTACAAT AAAAATATTC AAACATCATT GGAAAATATA GTATGGCTTT      1620
```

768

```
TTTCATCGTT TGAGATTTTA TTTTTGCTTG TTAATTTTAG AACATTTATT CAGTTACCAG          1680

TGGATATTTT TATTGGTATG ATAATATTTT TAATGCTGTG GATATTTATT ATGTTAGGTA          1740

TAGTGTGTCT TAGTTATTAT ATAACTTTAT TATTTAGCAA GGAGGCTTAG TATGTTTAAA          1800

AAAATAGGTA TAATGAGCAT TTGCATATAT ATAATTATTT TATACTGCTT GAGAATGTAT          1860

CGTATTATCA ATAATATTGA AACAATCTTG CTAACGGTTA TATGCTTAAT GTTATTGTTT          1920

TTTTTAAGAC GTTTATTTGA TAAAGATAAG TAAATAGATG TTAAGTAAAA ATGTAGAATA          1980

TAAAGGAGGT GCAATGAGTA TGATTGAAGT TAGCCATTTA TCAAAAAGTT TTGGTGATAA          2040

AATAGCTTTA AATAATATAA GCTTCACTGT TAAAGAAGGT TAGATTTTTG GATTTTTAGA          2100

ACCATCTGGT TCTGGAAAGA CCACAACGAT TAATATTCTG ACTGGGCAGT TCCTTGCCGA          2160

TAAAGGACAA TCTATTATTT TGGGACAAAA ATCTCAAAAT TTAACAAGCG GTGAATTAAA          2220

GAGAATTGGA TTGGTTAGCG ATACAAGTGG ATTTTATGAG AAAATGTCTC TGTATAACAA          2280

TCTTCTTTTT TATAGTAAAT TTTATAATAT TAGTAAATCA CGTGTTGATA ATTTGTTAAA          2340

GCGAGTAGGA TTATATGATA GTCGCAAGAT GGTAGCAGGA AAATTATCCA CTGGAATGAG          2400

GCAACGAATG CTTTTAGCAC GAGCTCTTAT CAACAACCCC GCTGTACTCT TTCTGGATGA          2460

ACCGACCTCA GGTCTAGATC CCACAACTTC TCGAACAATT CATGAGTTAA TTTTAGAATT          2520

GAAAACAGCA GGGACAACGA TTTTTCTAAC GACTCATGAT ATGAATGAAG CAACTCTTTT          2580

ATGTGATTAT GTTGCCTTAT TAAATAAAGG GAAATTAGTT GAGCAAGGAG CTCCTTCTGA          2640

ACTCATTCAA AGATATAATA AAGATAAAAA GATTAAGGTT ACAGATTATA ATGGGAATCA          2700

GATAACTTTT GATTTTACAT CACTAGAACA GGTATCTCAG ACTGATCTGG AAAATATTTT          2760

TTCAATTCAT TCATGTGAGC CTACTTTAGA AGATATTTTT ATCACATTAA CAGGAGGAAA          2820

GCTAAATGCT TAAACGGTTT CTGGCTTTGG TATGGTTGCG TTGTCAAATC ATCCTTTCCA          2880

ATAAGAGTAT TTTATTGCAA GTTTTAGTGC CTTTTGCTTT CACATATTTT TATAAATATC          2940

TTATGGAAAC ACAGGGGAAG GTCAACGATC AACAGGCATT AGTTCTTTTG ATGATGTGTT          3000

TACCTTTTTC TTTTTCTTTG GCTGTTGGAA GTCCTATAAC TATTATCTTG TCTGAAGAAA          3060

AAGAAAGTA CAATTTACAA ACTCTTCTGT TGAGTGGTGT TAAAGGCTCC GAATACATTT          3120

TATCAACTAT GTTTCTTCCT TTTTTGCTAA CTTTTGTGAT TATGGGAACT ACTCCTCTTA          3180

TTTTAGGAGT TACAATTGTA CATACTTTTA ATTATATTAC AATCGTTCTT CTAACCTCTT          3240

TATCCATCAT TTTATTCTAT TTATTGATAG GTTTAACCGC GAAGAGCCAA GTAGTAGCTC          3300

AGGTTATCAG TCTTCCTGCT ATGATTTTAG TTGCTTTCTT ACCGATGCTA TCTGGTTTGG          3360

ATAAGACAGT TGCGAAGATA ACAGATTATA GTTTTATGGG ACTATTTACT AAGTTTTTCA          3420
```

770
```
ACTCGTACCC TAATTGAAAA TGGTTTTGTG GAAGCTATCA AAGAAGCCTT TCCTGAAGTA      5220

GAAGTGATTG CAGGAACTGC AACAGCAGGG ATTCCACACG GAGCCATTAT TGCTGATAAG      5280

ATGGACTTGC CTTTTGCCTA CATCCGTAGT AAAACCAAAAG ACCACGGAGC TGGTAATCAA     5340

ATCGAAGGTC GCGTAGCTCA AGGTCAAAAA ATGGTAGTGG TTGAAGACCT TATTTCAACG      5400

GGTGGTTCAG TTCTTGAAGC TGTAGCAGCA GCCAAGCGAG AAGGAGCAGA TGTACTTGGA      5460

GTTGTAGCGA TTTTCAGCTA CCAATTGCCA AAAGCAGATA AGAACTTTGC AGATGCTGGT      5520

GTTAAACTTG TGACGCTTTC AAACTATAGC GAGCTTATCC ATCTAGCCCA AGAAGAAGGT      5580

TACATCACGC CAGAGGGCCT TGATCTTCTA AAACGCTTTA AAGAAGACCA AGAAAATTGG      5640

CAAGAAGGTT AGGTCAGTAA GATAAAGAGA GACGAGGCTA CCGAGTCTCT TTTACCATTT      5700

TATTTAAAAT ATGACAG                                                    5717
```

(2) INFORMATION FOR SEQ ID NO: 103:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 5558 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103:

```
CCTGGACTTT CTAAAATGAA ATCTTGCGAC CTGGATCAAG CCCTTCATGA GCATTTTTCA        60

GAAGAAGAAT TAGCTGGTCA CTTTCATGTC CTTCTATGGA CTTTTTTTAC AATGGCATTG       120

CTATCACACC CAATACCTAT CTAAGCGCCT GGTTCGTAAA CTTTATTGCA GCTCTTCCTC       180

TAAATTTCCT AATTGTTGAA CCAATTGCCC GTTTTATACT AAGTTCTTTT CAGAAACCAT       240

TTACTGGGGA AGAAGTTGAA GATTTTCAAG ATGATGATGA AATCCCAACT ATTATCTAAG       300

CCAGTTCTGT AAACTACTAA TATTTGAAAT CCACTTCCTT TTAGGGTGCA ATGGTTATAA       360

ATGAATTTTT GAGAGGATCA GAATGAAAAA ACTAGCAACC CTTCTTTTAC TGTCTACTGT       420

AGCCCTAGCT GGGTGTAGCA GCGTCCAACG CAGTCTGCGT GGTGATGATT ATGTTGATTC       480

CAGTCTTGCT GCTGAAGAAA GTTCCAAAGT AGCTGCCCAA TCTGCCAAGG AGTTAAACGA       540

TGCTTTAACA AACGAAAACG CCAATTTCCC ACAACTATCT AAGGAAGTTG CTGAAGATGA       600

AGCCGAAGTG ATTTTCCACA CAAGCCAAGG TGATATTCGC ATTAAACTCT TCCCTAAACT       660

CGCTCCTCTA GCGGTTGAAA ATTTCCTCAC TCACGCCAAA GAAGGCTACT ATAACGGTAT       720

TACCTTCCAC CGTGTCATCG ATGGCTTTAT GGTCCAAACT GGAGATCCAA AAGGGGACGG       780

TACAGGTGGT CAGTCCATCT GGCATGACAA GGATAAGACT AAAGACAAAG GAACTGGTTT       840
```

771

```
CAAGAACGAG ATTACTCCTT ATTTGTATAA CATCCGTGGT GCTCTTGCTA TGGCTAATAC      900

TGGTCAACCA AACACCAATG GCAGCCAGTT CTTCATCAAC CAAAACTCTA CAGATACCTC      960

TTCTAAACTC CCTACAAGCA AGTATCCACA GAAAATTATT GAAGCCTACA AAGAAGGTGG     1020

AAACCCTAGT CTAGATGGCA AACACCCAGT CTTTGGTCAA GTGATTGACG GTATGGATGT     1080

TGTGGATAAG ATTGCTAAGG CCGAAAAAGA TGAAAAAGAC AAGCCAACTA CTGCTATCAC     1140

AATCGACAGC ATCGAAGTGG TGAAAGACTA CGATTTTAAA TCTTAAAAAC CAAAAAAATA     1200

CAGTATCCAC ATTCGGTACT GTATTTCTTT TACTCTCATT CTTAAGTTAA ATTATTAAAA     1260

TCCCATATTT GGTCTATCCA GCCTTCATAA AAGTCTGGCT CGTGGCAGAC CATAAGGATA     1320

GATCCCCTAT ATTCTTTGAG AGCGCGTTTG AGCTCATCCT TTGCATCCAC ATCCAAATGG     1380

TTGGTCGGCT CGTCCAGCAC TAAAACGTTG TTTTCACGAT TCATCAAGAG ACAGAAACGA     1440

ACCTTGGCTT GCTCTCCCCC TGATAATACT TGAATCTGGC TTTCAATATG TTTGGTTGTC     1500

AAACCACAAC GGGCAAGGGC TGCACGGACT TCTGCTTGAT TAAGGGCAGG AAAGGCATTC     1560

CAGACAGCTT CAAGAGGAGT TTGGCGATTA CCGCCTTCTA CTTCCTGCTC AAAATAACCA     1620

AGTTCTAAAT AATCTCCACG CTCCACTTCC CCAGCGATTG GCGAGATAAT GCCCAAGAGA     1680

CTCTTCAAGA GAGTTGTTTT TCCAATACCA TTAGCACCAA TAATCGCAAC CTTTTGATTG     1740

CGTTCGAAGG TAAGATTTAA AGGCTTAGTA AGAGGACGGT CGTAACCAAT TTGCAAGTTC     1800

TTGGCTTGGA AGATAAAGCG CCCTGGTGTA CGAGCTGGTT TGAAATCAAA GGATGGTTTT     1860

GGTTTCTCAC TTTGGAGTTC GATAATATCC ATCTTATCCA ATTTCTTTTG ACGAGACATA     1920

GCCATATTAC GAGTTGCAAC ACGGGCTTTA TTACGAGCCA CAAAGTCCTT GAGGTCTGCA     1980

ATCTCTTTCT GCTGGCGTTC GTAGGCTGCC TCTAGCTGAG ATTTCTTCAT AGCATAAACT     2040

TCTTGGAACT GGTAGTAGTC ACCAGAGTAA CGCGTCAGCT GTTGATTTTC CACATGATAG     2100

ACAATATTAA TAACGTCATT GAGGAATGGA ATATCGTGCG AAATGAGAAC AAAGGCATTC     2160

TCATAGTTTT GGAGATAGCG CTTGAGCCAA TCAATATGCT CAGCATCCAA GTAGTTGGTC     2220

GGCTCGTCCA ACAGCAAGAT ATCAGGCTTT TCAAGGAGAA GTTTTGCCAA AAGCACCTTG     2280

GTTCTTTGCC CACCTGACAA AGAAGTTACA TCCGTATCCA TGCCAAAGTC CATAACACCA     2340

AGAGCACGCG CTACTTCGTC AATCTTAGCA TCCAAGGTAT AGAAATCACG ACTCTCCAGA     2400

CGGTCTTGAA GTTCTCCTAC TTCTTCCATG AGAGCATCAA CATCCGCGCC GTCTTCAGCC     2460

ATTTTCATAT AGAGGTCATT GATACGAGCT TCAGCTTTGA AAAGCTCATC AAAAGCCGTA     2520

CGGAGAACAT CACGCACCGA CTGTCTTTCA GCAAGGACAG AGTGCTGATC CAAGTAACCA     2580
```

772

```
GCCGTCACAT ATTTGGACCA CTCAACCTTT CCTTCATCTG GCAGCATTTT ACCAGTCACG    2640

ATACTCATAA AGGTTGATTT TCCTTCACCA TTGGCACCGA CCAGGCCGAT ATGTTCTCCC    2700

TTGAGGAGAC GGAAGGACAC ATCTTCAAAA ATTGCACGGT CACCAAAACC GTGACTCAGA    2760

TTTTTAACTT CTAAAATACT CATTTTAATT CCTTACCTTG TTTTTATGTA ATCGTTTATA    2820

AAGGAGCCAA GCCAGATAGC CACCCAAAGT GTTGGTCCAC AAATCATCAA TCTCAAAGAC    2880

GCGATTGAAA TCAAAGAAAA AGTCCAAGAT TAATTGCGTA CACTCGATTC CAAGACTCAC    2940

AAGAAAACTA AAAAGAAGGA CCTTTTTTGT TTTCCGCAAA TTTGGAAATA GATAAAGGAG    3000

TTGGAAAATC AGAGGAAAAA ACAAGAAGAC ATTGAGGATA TTTTGTAAAA AAATCCAACA    3060

TAATTGTCCA ATGTCACTCA CTTCGCCCAG TTTCCAGAGA GAATTGAAAG GAGTCAAAAG    3120

AAAAACCAGG CGTCCAAGAT GCTGAATACC TGGAGTTCCC ACTCCCACGG TAGATTGTTC    3180

TTGAGGAGTA AAGCAAAAAC AGACAATGCA AATGCTATAG AAAATGACTC CCCAGACCAA    3240

AATATGATTA TAAGTCTTCT TCATCATTAA GGATTTACCG CTGCGACTGC CTTCTGGCGG    3300

TCACGTTTCA TTGTGTTAGA GCGCAATTGT CCACAAGCTG CGTCAATATC TGTACCATGC    3360

TCTTGACGAA CCACACAGTT GACCCCTTTT TTCTTAAGCG TATCATAGAA AGCCAACACG    3420

CACTCTTTGG GACTACGGCT ATATTGGTCA TGCTCACTAA CTGGGTTATA AGGAATCAAG    3480

TTTACATAAG ACAATTTCTT GATGTTCTTG AGCAATTCAG TCAATTCCAA GGCTTGTTCT    3540

ACACCGTCGT TGACTTCATT AAGCATGATA TATTCAAAGG TTACACGACG GTTTGTTGTC    3600

TCAATGTAGT ATTCAATAGC AGCAAAGAGT TTTTCAATCG GAAAGGCACG GTTAATCTTC    3660

ATGATACTTG AACGAAGTTC ATTGTTAGGT GCGTGAAGAG ACACGGCAAG ATTGACCTGA    3720

ACCCCTTCAT CAGCAAAGTC ACGAATTTTA TGAGCCAAAC CTGAGGTTGA AACCGTGATG    3780

TGACGAGCAC CGATAGCCAT TCCTTTATCA TCATTGATAG TACGAAAGAA ATTCAAGACA    3840

TTGTTGTAAT TATCAAAGGG CTCACCGATT CCCATGACAA CGATATGGCT GATGCGTTCA    3900

TCCTGACCAC GCTCATCAAA GTATTTCTGA ACCAGCATGA TTTGCGCTAC GATTTCACCG    3960

TTATTGAGGT CACGTTGCTT CTTAATCAAA CCAGAGGCAC AGAAGGTACA ACCGATATTA    4020

CAGCCGACCT GAGTGGTCAC ACAGACAGAT AAACCATAGT GTTGACGCAT GAGTACAGTC    4080

TCAATTAACA TACCGTCGGG CAATTCAAAG AGATATTTGA CTGTACCATC AGCAGACTCT    4140

TGCACAATAC GTTGTTTCAA GGGATTGACC ACAAACTGGT CATTGAGCTT AGCAATCAAA    4200

TCCTTGGAAA GGTTGGTCAT TTCTTCAAAT GACTGCACAC GTTTACGGTA GAGCCATTCC    4260

CAGATTTGAT CTGCACGGAA TTTCTTTTCT CCCTGCTCCA ATACCCATTC CTGCATGGTT    4320

TGATGTACCA AACTATGAAT TGAGGGTTTC ATTTCTTCTC CTTATTCTCT ACTCACTTCT    4380
```

773

```
GACGAATGAC AAAATGACGT TGTCCCTTGT CGTCTTTCTG ACGACGTCTA TTTTTCTTAT        4440

CTGCATTCGA CTTTCGTTTA GTTTGAGTCG GTTTCTTTCC TTTTCTAGAA GGTGTTTCTT        4500

CTTCCGTCTT ACGCATTTTC TTGTCAAATG ATGCTCGCTT AGGGGCTTCA TTTTCTAAGA        4560

CAAAATAGGC ACAACCATAA CTACAATACT CTAAAAGGTA GTCTTGTAAA CGACTGATTT        4620

TTTCAAGTTT TTCTTCTGTT CGGTCATCCT TGTAAAAACC TCGTAGGCGA AGCTGTTCGT        4680

TGCTCCAGTC CCCCACGATA TAATCAAACT TGGTTAATAC TTCTGAAAAA CGCTGATTAA        4740

AAGTCGTCAC ATCAAAGGCA TCCTTGATAT TTTCAACCAA GGAAAAAGCT ATCCCTTCCG        4800

TTTCGACCTT GTCCCCGTGT AAATGGAACT CCGGACCAGG AAACTTGTTA TAGTTGTATA        4860

ATTCAGGTGC AATTTCTTTT CGCATAGATA TCCTTTTTTC ACGATTACTT AATACTTTAT        4920

TCTACCATAA TTTCTAGCAG TTAGCACGTT TCTCATAAAA ATGAAAAAAG TCTGACGATT        4980

TTGTCAGACC AGAATCTTAT AACCTAAAAA GAGAAGAACA ATTCTTCCCT CCAACTATCA        5040

TTATTTAGCA GCTGCGTACA ATTCATCTAC TTTATTCCAG TTGATTACTG AAAAGAAAGC        5100

TTTGATGTAG TCAGGACGCA CGTTGCGGTA TTTCACGTAG TAAGCATGTT CCCAAACGTC        5160

CAAGCCCAAG ATTGGTTTTT TACCTTCTGA GATTGGTGTG TCTTGGTTTG CTGTTGAAGT        5220

CACTTCAAGT TTCCCTTCTT TGTTGACAAC CAACCATGCC CAACCTGAAC CAAAACGAGT        5280

TGTTGCTGCT GCAGTGAAGG CTGCTTGGAA TTCTTCAAAT GAACCAAATG TTGCATCGAT        5340

TGCTGCTGCC AGTTCTGCTG AAGGAGCTGT TTTCTCGGGA GTCATCAATT CCCAGAAAAG        5400

AGCGTGGTTC AAGTGTCCGC CACCATTGTT GATAAGTGCT TGACGGATAT CAGCTGGGAT        5460

AGATTCTACA TCAGCAAGCA AGGCTTCAAG GTCTTCACCG ATTTCAGGGT GTTTTTCTAA        5520

AGCTGCATTG GCATTGTTGA CATAAGTTTG ATGGTGTT                               5558
```

(2) INFORMATION FOR SEQ ID NO: 104:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 6735 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104:

```
GGAATTGTAA ATATCATATT GTTTTTGCAC CCAAATATCG TCGTCAAATC ATTTATGGCA          60

GATACAAAGC TAGTATCGGA AGAATCATAC GTGACTTATG TGAGCGTAAG GGTGTAATAA         120

TCCATGAAGC GAATGCTTGT TCAGACCATA TTCACATGCT TATCAGTATT CCTCCGAAAC         180
```

774

```
TTAGTGTTTC GTCCTTTATG GGCTATTTAA AGGGCAAGAG CAGTTTGATG ATTTTTGATA       240

AGCATGCGAA TTTAAAATAC AAATATGGCA ATCGCAAGTT TTGGTGTAGA GGCTATTATG       300

TAGATACGGT AGGCCGTAAT CAGAAAGTGA TAGCTGAATA TATTCAGAAT CAATTACAAG       360

AAGACAGAGT AGCAGACCAG CTCACGTTAT TCGAGTCAGT AGATCCGTTT ACTGGCGAAA       420

TAAATAAGAG GAAGTAACTA AGGTGCTTTA GCACCTGCTC GGGAAAGTGG TGCGCGAGGA       480

AGCTATTTCG GTGGGCCTTT GGCCCTGGCC GGTAGAAGCG GCTTATAGCC GCAGAACAAA       540

CCACCAGTTC ACACTGGTGG TTTTGATTTA AAAAACTTGA TACATAAAAA TAAAAGTCTA       600

TATAAAGGAT GGTAAAATTC CTGTTGTCCG ATTTGGACAA TATCCTAAAT AGTTACAATA       660

TATGGTCTAT ACTTTTTCTT AGGAGAAAGC TAGATGTACA GACGTTTGAG AGATTTGAGG       720

GAGGATCATG ATCTGCCCCA AAAGCAAATA GCTACAATAC TTTCGTTTAC AAATTCAGCT       780

TATGCCAAAA TTGAACGGGG TGAGCATGCG TTGACGGCTG ATGTATTGGT TAAACTCTCA       840

GATTTCTATG ACGTCAGTAC AGACTATTTA TTGGGATTAA CTGATTTTCC TGATAAAATT       900

CGCTTTAGAA AATAATCTCC TCAATTTCAT AGAGTTTGAA AATGAGTGAG ATTTTTTATT       960

TGCCCTTTGA CAACTGAATA GCCTAAAATG GTACTTTCCT CATTTGTGGA GCAAATTTGA      1020

ATGGCTCGCC ATGATAAGAG CGATTTTAAA ATCATCAATA AAATAGAGCG ATACTTTATA      1080

TGCCATGATA CAAATGATAT ACAATGATAC TTCTGACCGT TCAGCCTGCC AACGTAAAAG      1140

AGCAGCAAGT GAAATTCTTA TGATGACTTC ATCAGTCATG CCACGTTGAA TGTGTGAGTT      1200

TGTTAGATAA ACGCAATTAA TCCTCAAAAG GTTCCCCGAA CCTTTTGAGT TCTACAGACG      1260

CATCACGTGG AGTGTGTAAG CTTGTTGCTA AAAGCGTAAA AACCTTGGAA CGAAAGGAAT      1320

AATAGACTTT CTGCGAAACA AAAATATAAT ACAATAAAAC TATGAATGAT GAAGCAAGTA      1380

AACAATTGAG CGATAGCCGT TTCAAGATCC TTGTAGGTGT TCAGCGCACG ACTTTTGAAG      1440

AGATGTTAGC TGTGTTAAAA ACAGCTTATC AACGTAAACG CGCAAAAGGT GGACGAAAAA      1500

GCAAATTAAG CCTAGACGAT CTCCTTATGG TAACTATTCA ATACATGCGA GAATAGAGCA      1560

CTTATGAACA AATTGCGGCT GATTTTGGCA TTCACGAAAG CAACTTAATC CGTCGGAGTC      1620

AATGGGTTGA AGCAACTCTT ATTCAAAATG GTTTTACGAT TTCAAATTCT GCCTTAATTC      1680

TGTAAAAACA GTAAAATTCG AAGGATTGTA AGGTAAGAGT TTTTTTCTTT CTGAAAAAAT      1740

GGTATAATAG CAATCAAAAC TAGAAAATAA AACGGAATTT GGAACAGATT TGTCTGTATC      1800

CTAGTAGAGT GGTGATACTA TGAAGATTAG TAAGAGGCAC TTATTAAATT ATTCCATCTT      1860

GATTCCCTAC TTGCTTTTAT CTATTTTGGG CTTGATTGTG GTCTATTCGA CCACCAGTGC      1920

TATTTTAATT GAAGAAGGCA AGAGCGCCTT GCAGTTGGTT CGAAACCAAG GAATCTTTTG      1980
```

775

```
GATTGTTAGT TTGATACTGA TTGCCTTAAT TTATAAATTG AGACTAGATT TTTTGAGAAA    2040

TGAGCGACTA ATCATTTTAG TTATATTAAT AGAAATGCTT TTATTGTTCT TGGCTCGTTT    2100

TATTGGTATT TCCGTAAACG GGGCATACGG TTGGATTTCG GTTGCAGGAA TAACTATTCA    2160

GCCAGCTGAG TACTTAAAAA TCATTATTAT TTGGTATTTA GCTCACCGAT TCTCCAAACA    2220

GCAAGAAGAA ATAGCTACTT ATGATTTTCA AGTTTTGACT CAAAATCAAT GGCTTCCCCG    2280

TGCTTTTAAT GATTGGCGAT TCGTTCTCCT AGTTCTGATT GGAAGTTTGG GAATTTTCCC    2340

TGATTTAGGA AATGCGACTA TTTTAGTCTT GGTTTCCTTG ATTATGTATA CAGTTAGTGG    2400

AATCGCTTAT CGCTGGTTTT CAACCATTCT GGCGCTCGTA TCTGCCGCTT CTGTCTTTGT    2460

CTTGACCACT ATCAGCCTAA TCGGTGTTGA GACCTTTTCA AAAATTCCAG TATTCGGCTA    2520

TGTAGCCAAG CGCTTTAGTG CCTTTTTTAA TCCTTTTGCC GATCGTGCTG ATGCAGGTCA    2580

CCAGTTAGCT AATTCTTATT TTGCCATGGT CAATGGCGGT TGGTTTGGTC TAGGTCTTGG    2640

AAACTCGATT GAAAAACGAG GTTATTTGCC AGAAGCTCAT ACAGACTTTG TCTTTTCTAT    2700

CGTGATTGAA GAATTTGGCT TTGTTGGTGC CAGTCTTATT TTAGCTCTCT TGTTTTTCAT    2760

GATTTTGCGG ATTATCTTGG TCGGTATCCG AGCGGAGAAT CCTTTCAATG CCATGGTTGC    2820

ACTCGGTGTC GGAGGGATGA TGTTGGTTCA GGTATTTGTC AATATCGGAG GGATTTCGGG    2880

CTTGATTCCA TCTACAGGAG TGACTTTCCC CTTCTTATCC CAGGGTGGAA ATAGTCTTCT    2940

AGTCTTATCA GTGGCAGTAG CCTTTGTCTT AAATATTGAT GCCAGTGAAA AACGCGCTAA    3000

ATTGTACCGA GAATTGGAAA ATCAACCAAT GAACCTTCTG TTGAAGTAGG ATAAAGAAAG    3060

GATAGTTTAT GTCTCTTCAA AAATTAGAAA ATTATAGTAA TAAAAGTGTT GTGCAAGAAG    3120

AAGTCTTGAT TCTAACAGAA TTACTGGAAG ATATTACTAA AAATATGCTT GCCCCAGAGA    3180

CCTTTGAAAA AATAATACAG TTGAAAGAAT TATCAACGCA GGAAGATTAT CAAGGTCTAA    3240

ACCGTCTAGT GACTAGCTTA TCAAATGATG AAATGGTCTA TATTTCACGC TATTTCTCTA    3300

TCTTGCCTCT TTTGATTAAT ATTTCAGAGG ATGTGGATTT AGCTTATGAA ATCAATCATC    3360

AAAATAATAT TGATCAGGAC TATTTAGGTA AATTATCTAC AACGATTAAA TTGGTAGCAG    3420

AAAAGGAAAA TGCCGTTGAG ATCCTAGAAC ACTTGAATGT TGTCCCTGTT TTGACAGCCC    3480

ATCCAACACA AGTGCAACGC AAAAGTATGT TGGATTTAAC AAATCATATT CATAGTCTTT    3540

TGCGTAAATA CCGTGATGTT AAGTTGGGGT TGATCAATAA AGATAAATGG TACAATGATT    3600

TGCGTCGTTA CATCGAAATT ATCATGCAGA CAGACATGAT TCGTGAGAAA AAATTAAAAG    3660

TGACTAACGA AATCACGAAT GCTATGGAAT ATTATAACAG CTCCTTTTTG AAAGCTGTAC    3720
```

776

```
CTCATTTGAC GACGGAGTAT AAGCGCTTAG CGCAAGCGCA TGGTCTGAAT TTAAAACAGG     3780

CTAAACCAAT CACCATGGGT ATGTGGATAG GTGGTGACCG TGATGGAAAT CCATTTGTTA     3840

CAGCAAAGAC CTTGAAGCAG TCTGCACTCA CTCAGTGTGA AGTCATCATG AACTACTATG     3900

ATAAAAAGAT TTACCAACTT TATCGTGAAT TTTCTCTTTC AACTAGCATT GTCAACGTCA     3960

GCAAGCAAGT CAGAGAAATG GCTCGTCAAT CCAAGGATAA CTCGATTTAC CGCGAAAAAG     4020

AGCTTTACCG TCGTGCCTTG TTTGATATTC AATCAAAAAT TCAGGCAACT AAAACCTATC     4080

TGATTGAGGA TGAAGAAGTT GGGACTCGTT ATGAAACCGC CAATGATTTC TACAAGGATT     4140

TGATTGCCAT TCGAGATTCT CTACTAGAAA ATAAGGGCGA GTCCTTGATT TCAGGTGATT     4200

TTGTGGAATT ATTGCAGGCA GTAGAGATAT TTGGTTTTTA CTTAGCATCA ATTGATATGC     4260

GACAAGACTC TAGCGTCTAT GAAGCCTGTG TGGCAGAACT CTTGAAATCA GCAGGAATTC     4320

ATTCTCGTTA TAGCGAGTTG AGCGAAGAAG AAAAGTGTGA CCTTCTCTTG AAAGAATTAG     4380

AAGAAGATCC CCGAATTCTT TCTGCGACTC ACGCAGAAAA ATCAGAATTA TTAGCAAAAG     4440

AATTAGCTAT TTTTAAGACG GCTCGTGTTT TGAAAGATAA GTTGGGAGAT GATGTCATCC     4500

GTCAGACCAT CATTTCACAT GCAACCAGCC TTTCTGATAT GCTAGAATTA GCTATTCTGT     4560

TAAAAGAAGT AGGACTGGTG GATACGGAAA GGGCGCGTGT TCAGATTGTT CCCCTTTTTG     4620

AAACAATTGA AGACTTGGAT CATTCAGAGG AAACAATGAG AAAAATATCTT TCTCTTAGCC     4680

TTGCCAAAAA ATGGATTGAC TCACGAAATA ACTACCAAGA AATCATGCTT GGCTACTCTC     4740

ACAGTAATAA AGATGGCGGT TACTTGTCAT CATGTTGGAC CCTCTACAAG GCTCAACAAC     4800

AATTGACTGC TATTGGAGAT GAATTTGGCG TTAAGGTTAC CTTCTTCCAT GGTCGTGGTG     4860

GTACTGTCGG TCGTGGTGGT GGGCCAACCT ATGAAGCCAT TACATCTCAA CCGCTCAAGT     4920

CTATCAAGGA TCGTATCCGC TTGACGGAGC AGGGTGAAGT AATTGGGAAT AAATACGGTA     4980

ACAAAGACGC CGCTTACTAT AACCTTGAAA TGCTAGTATC GGCAGCTATT AACCGTATGA     5040

TTACTCAGAA GAAGAGCGAT ACCAATACCC CAAATCGTTA TGAAACCATT ATGGATCAAG     5100

TAGTGGACCG TAGTTACGAT ATCTACCGTG ATTTGGTCTT TGGTAATGAG CATTTCTATG     5160

ATTATTTCTT CGAGTCAAGT CCAATCAAGG CTATTTCAAG TTTTAATATT GGTTCTCGTC     5220

CAGCCGCTCG TAAGACTATT ACTGAAATCG GTGGTTTGCG TGCCATCCCT TGGGTATTCT     5280

CATGGTCACA GAGTCGTGTT ATGTTCCCTG GATGGTACGG GGTTGGTTCA AGCTTCAAGG     5340

AATTTATCAA TAAAAATCCA GAGAATATTG CTATCTTACG AGATATGTAC CAAAAATTGGC     5400

CTTTCTTCCA ATCGCTTCTT TCAAATGTTG ATATGGTTTT GTCAAAATCA AATATGAATA     5460

TTGCTTTTGA ATATGCTAAA CTTTGTGAAG ACGAGCAAGT TAAGGCCATC TATGAGACTA     5520
```

777

```
TTTTAAATGA ATGGCAAGTT ACTAAGAACG TTATCTTGGC TATTGAAGGA CATGACGAAC      5580

TCTTAGCTGA CAATCCATAT CTAAAAGCTA GTCTGGATTA CCGTATGCCT TACTTTAATA      5640

TTCTCAACTA TATTCAGTTG GAGTTGATTA AACGCCAACG TCGTGGAGAA TTGTCCAGTG      5700

ATCAAGAACG ATTGATTCAT ATCACCATCA ACGGAATTGC GACAGGATTG CGTAATTCAG      5760

GTTGATAATT TTCAAGAGTG AATGCTAAAA GTGAATATCA AAAAAATTCT AATAGACTAT      5820

TGACAAGTAG TTTAAAAATG ATATAATTTA ACCATTCAGA AAAGTAATCA TACAAACTTT      5880

TTAGAGAGTC TGTGGTAGCT GAAAACAGAT AAGTGGCAAT GATGAAAATT GGGCTGAATG      5940

CTATTTAGAA TTTGAAATTA TAAAAATTCG GTAAGCACAC CTTACAGTGC ATCTCGTTAT      6000

TGCGAGACTG AGCGATAGGG AAATTCCCTA TAATTGAGGT GGTACCGCGC ATCGACGTCC      6060

TCACACAAGT TTTTTGTGTG AGGATTTTTT TGATGGAGGT TAGTATGGAA AGAAAACGAT      6120

GGCGTCGCTT GTTTAGATAA GTGAAATATG TTAAAGGAAA TAAAAAGGAG AAACAGAATG      6180

AAAAATAAAC GTTTAATTGG AATTATTGCT GCATTAGCAG TCTTAGTAGC AGGAAGCTTG      6240

ATTTATTCTT CAATGAATAA ATCAGAAGCT CAGAATAATA AGGATGAGAA GAAAATAACC      6300

AAGATTGGTG TGCTTCAATT TGTGAGCCAT CCATCCCTTG ATTTGATTTA TAAAGGGATC      6360

CAAGATGGAC TTGCAGAAGA AGGATATAAA GATGATCAAG TTAAAATTGA TTTTATGAAC      6420

TCAGAAGGTG ACCAAAGTAA GGTTGCGACA ATGAGTAAAC AATTGGTTGC AAATGGGAAT      6480

GACCTTGTGG TTGGTATCGC AACACCAGCA GCCCAAGGGT TGGCTAGTGC AACAAAAGAC      6540

CTACCGGTTA TCATGGCCGC TATTACAGAC CCAATTGGTG CTAACTTGGT TAAAGATTTG      6600

AAAAAACCAG GTGGCAACGT TACAGGGGTA TCTGACCACA ATCCAGCTCA ACAACAAGTT      6660

GAACTCATCA AGGCTCTGAC ACCGAATGTG AAAACAATCG GAGCTCTTTA CTCAAGTAGC      6720

GAAGACAATT CAAAA                                                      6735
```

(2) INFORMATION FOR SEQ ID NO: 105:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 6516 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105:

```
CTAGAGGATC CCAGCAGGTA AATTGGCTTC AGCTGGCAAA AAAGTTGCCC TCGTTGAACG       60

CAGCAAGGCT ATGTACGGTG GAACTTGTAT CAACATTGGT TGTATCCCAA CTAAAACCTT      120
```

778

```
GCTAGTTGCT GCTGAAAAGG ACTTGTCTTT TGAAGAAGTC ATTGCTACTA AAAACACGAT      180

CACTGGTCGC CTCAACGGTA AAAACTATGC GACTGTTGCT GGTACAGGCG TAGATATCTT      240

TGATGCGGAA GCTCACTTCC TTTCAAATAA AGTCATCGAA ATCCAAGCTG GTGATGAAAA      300

GAAAGAACTG ACTGCTGAAA CAATCGTCAT CAACACTGGT GCTGTTTCAA ACGTCTTGCC      360

AATCCCTGGA CTTGCTACAA GCAAAAACAT CTTTGACTCA ACAGGTATCC AAAGCTTGGA      420

CAAATTACCT GAAAAACTTG GAATCCTTGG TGGCGGAAAT ATCGGTCTTG AATTTGCCGG      480

CCTTTACAAC AAACTTGGAA GCAAGGTCAC AGTCCTAGAT GCCTTGGATA CATTCCTACC      540

TCGTGCAGAA CCTTCCATCG CAGCTCTTGC TAAACAAATAC ATGGAAGAAG ATGGCATTGA      600

ATTGCTTCAA AATATCCATA CTACTGAAAT CAAAAACGAT GGTGACCAAG TGCTTGTCGT      660

AACTGAAGAC GAAACTTACC GTTTCGACGC CCTTCTCTAC GCAACTGGAC GCAAACCAAA      720

TGTAGAACCA CTTCAACTTG AAAATACAGA TATTGAACTA ACTGAACGTG GTGCTATTAA      780

AGTAGACAAA CACTGTCAAA CAAACGTTCC TGGTGTCTTT GCAGTTGGAG ATGTCAACGG      840

TGGCCTTCAA TTTACTTACA TTTCACTTGA TGACTTCCGT GTTGTTTACA GCTACCTTGC      900

TGGAGATGGC AGCTATACAC TTGAAGACCG TCTCAATGTG CCAAATACTA TGTTCATCAC      960

ACCTGCACTT TCACAAGTTG GTTTGACTGA AAGCCAAGCA GCTGATTTGA AACTTCCATA     1020

CGCTGTTAAG GAAATCCCCG TTGCAGCAAT GCCTCGTGGT CACGTAAATG GAGACCTTCG     1080

CGGTGCCTTC AAAGCTGTTG TCAATACTGA AACAAAAGAA ATTCTTGGAG CAAGCATCTT     1140

CTCAGAAGGT TCTCAAGAAA TCATCAACAT CATCACTGTT GCTATGGACA ACAAGATTCC     1200

TTACACTTAC TTCACAAAAC AAATCTTCAC TCACCCAACC TTGGCTGAGA ACTTGAATGA     1260

CTTGTTTGCG ATTTAAGTTG AGATTTAATC GTATCGAACA GCCCTCTTTG GGCTGTTTTT     1320

ACTTCTGCGG AATCTCAAAT CTGTCTTTCT CCTCTTTTAT GATATAATAG AAACATGAAC     1380

TTAAAAACTA CTTTGGGCCT TCTTGCTGGG CGTTCTTCCC ACTTCGTTTT AAGCCGTCTT     1440

GGACGTGGAA GTACGCTCCC AGGGAAAGTC GCCCTTCAAT TTGATAAAGA TATTTTACAA     1500

AACCTAGCTA AGAACTACGA GATTGTCGTT GTCACTGGAA CAAATGGAAA AACCCTGACA     1560

ACTGCCCTCA CTGTCGGCAT TTTAAAAGAG GTTTATGGTC AAGTTCTAAC CAACCCAAGC     1620

GGTGCCAACA TGATTACAGG GATTGCAACA ACCTTCCTAA CAGCCAAATC TTCTAAAACT     1680

GGGAAAAATA TTGCCGTCCT CGAAATTGAC GAAGCCAGTC TATCTCGTAT CTGTGACTAT     1740

ATCCAGCCTA GTCTTTTTGT CATTACTAAT ATCTTCCGTG ACCAGATGGA CCGTTTCGGT     1800

GAAATCTATA CTACCTATAA CATGATATTG GATGCCATTC GGAAAGTTCC AACTGCTACT     1860

GTTCTCCTTA ACGGAGACAG TCCACTTTTC TACAAGCCAA CTATTCCAAA CCCTATAGAG     1920
```

779

```
TATTTTGGTT TTGACTTGGA AAAGGGACCA GCCCAACTGG CTCACTACAA TACCGAAGGG      1980

ATTCTCTGTC CTGACTGCCA AGGCATCCTC AAAATATGAGC ATAATACCTA TGCAAACTTG     2040

GGTGCCTATA TCTGTGAAGG TTGTGGATGT AAACGTCCTG ATCTCGACTA TCGTTTGACA      2100

AAACTGGTTG AGTTGACCAA CAATCGCTCT CGCTTTGTCA TAGACGGCCA AGAATACGGT      2160

ATCCAAATCG GCGGGCTCTA TAATATCTAT AACGCCCTAG CTGCTGTGGC CATCGCCCGT      2220

TTCCTAGGTG CCGATTCGCA ACTCATCAAA CAGGGATTTG ACAAGAGCCG TGCTGTCTTT      2280

GGACGCCAAG AAACCTTTCA TATCGGTGAC AAGGAATGTA CCCTTGTCTT GATTAAAAAT      2340

CCAGTCGGTG CAACCCAAGC TATCGAAATG ATCAAACTAG CACCTTATCC ATTTAGCCTA      2400

TCTGTCCTCC TTAATGCCAA CTATGCAGAT GGAATTGACA CTAGCTGGAT CTGGGATGCA      2460

GACTTTGAAC AAATCACTGA CATGGACATT CCTGAAATCA ACGCTGGCGG TGTTCGTCAT      2520

TCTGAAATCG CTCGTCGCCT CCGAGTGACT GGCTATCCAG CTGAGAAAAT CACTGAAACG      2580

AGTAATCTGG AGCAAGTTCT CAAGACCATT GAGAATCAAG ACTGCAAGCA TGCCTATATT      2640

CTGGCAACTT ATACTGCCAT GCTGGAATTT CGTGAACTGC TGGCTAGTCG TCAGATTGTT      2700

AGAAAGGAGA TGAACTAATG GTTTATACTT CACTTTCCTC AAAAGATGGC AATTACCCCT      2760

ATCAGCTCAA CATTGCCCAC CTCTACGGAA ATCTCATGAA TACtACGGGG ACAATGGAAA      2820

CATCCTCATG CTCAAGTATG TGGCTGAAAA ACTGGGAGCC CATGTGACCG TTGACATCGT      2880

TTCTCTCCAT GATGACTTTG ATGAAAATCA CTACGACATC GCCTTTTTCG GTGGTGGTCA      2940

AGACTTTGAA CAAAGTATCA TTGCAGACGA CCTACCTGCT AAAAAAGAGA GCATTGACAA      3000

CTACATCCAA AACGACGGTG TAGTTCTGGC TATCTGCGGT GGTTTCCAAC TATTGGGTCA      3060

ATATTATGTT GAAGCTTCAG GAAAACGTAT CGAAGGGCTA GGGGTCATGG GACACTACAC      3120

GCTCAACCAG ACCAATAACC GTTTTATCGG TGACATCAAG ATTCACAATG AAGATTTCGA      3180

TGAAACCTAC TATGGATTTG AAAATCACCA AGGTCGTACC TTCCTCTCTG ATGACCAAAA      3240

ACCGCTGGGA CAGGTTGTCT ATGGAAATGG AAACAACGAA GAAAAGGTCG GTGAAGGGGT      3300

TCATTATAAG AATGTCTTTG GTTCCTACTT CCACGGGCCT ATCCTCTCTC GTAATGCCAA      3360

TCTGGCTTAT CGCCTAGTTA CTACTGCCCT CAAGAAGAAA TATGGTCAGG ACATCCAACT      3420

CCCTGCCTAT GAGGACATTC TCAGCCAAGA AATCGCTGAA GAGTACAGTG ACGTCAAAAG      3480

CAAGGCTGAC TTTTCTTAAA CAAAGGAAAA TGATATCAAA GAACTCCGTT ATCTTGTCGG      3540

AGTTTTTTGT CTTTTCTTTT ACCCTTCTCC CTTGCATTTT CTCTCATTTT TTGCCAAAAT      3600

AGAGGGGTAG AAAGAAGGTA GCATATGTCT AAATTACAAC AAATCCTAAC ATATCTTGAA      3660
```

```
                                   780
      TCAGAAAAAC TAGACGTCGC TGTCGTATCT GACCCCGTCA CAATCAATTA CCTCACTGGT    3720

      TTTTACAGTG ATCCCCATGA ACGCCAAATG TTCCTCTTTG TCCTAGCAGA TCAGGAACCT    3780

      CTCCTCTTTG TCCCAGCTCT TGAAGTAGAA CGTGCAAGTA GCACCGTTTC CTTCCCAGTA    3840

      GTGGGCTATG TCGATTCTGA AAATCCATGG CAAAAAATCA AACATGCTCT TCCACAACTT    3900

      GACTTCAAAC GTGTCGCTGT TGAGTTTGAC AATCTCATCT TGACCAAATA CCATGGTTTG    3960

      AAAACAGTTT TTGAGACTGC TGAGTTTGAC AACCTCACTC CTCGTATCCA ACGCATGCGC    4020

      CTCATCAAAT CAGCTGATGA AGTGCAAAAA ATGATGGTTG CAGGTCTTTA TGCTGACAAG    4080

      GCTGTTCATG TTGGTTTTGA CAATATTTCT CTTGATAAGA CTGAGACAGA TATCATCGCA    4140

      CAAATCGACT TTGCCATGAA ACGTGAAGGT TATGAAATGA GCTTTGATAC CATGGTCTTG    4200

      ACTGGTGATA ATGCTGCGAA TCCACACGGC ATTCCAGCAG CTAATAAGGT TGAAAATGAT    4260

      GCTCTTCTCC TCTTTGACCT GGGTGTTCTG GTCAATGGCT ATGCGTCAGA TATGACTCGT    4320

      ACAGTCGCTG TCGGCAAACC AGACCAATTC AAGAAAGATA TTTACAACTT GACTCTTGAA    4380

      GCCCAACAAG CTGCTCTTGA CTTTATCAAG CCAGGTGTGA CTGCTCATGA AGTGGACCGC    4440

      GCTGCCCGTG AGGTCATCGA AAAAGCTGGT TATGGTGAGT ACTTCAACCA CCGTCTCGGG    4500

      CATGGTATCG GTATGGATGT CCATGAATTC CCATCTATCA TGGAAGGAAA CGACATGGTC    4560

      ATCGAAGAAG GCATGTGCTT CTCTGTTGAA CCAGGTATCT ATATCCCTGG TAAAGTCGGT    4620

      GTTCGTATTG AAGACTGCGG TGTTGTTACC AAGGATGGCT TCAACCTCTT TACAAGCACC    4680

      AGCAAAGATT TGCTTTATTT TGATTAAACT ATATAGCCCC TATGCTTTCC TTTCAAAATA    4740

      TCTAGGGGCT ATTTTATTGT CATTTTTCTG CTATTATGCT AAAGAAATTG GCTGCAATAA    4800

      TCTAACCCTA AGTGTCTGGA ATGATAACGA GGGTGCTCTC CGCTTTTATC AAAGACAAGG    4860

      GATGAAACCC CAAGAAACAA CAATGGAAAT GATAATTGAT TAAGAAGTCA TCTATCAAAA    4920

      GATGTTAGAA AAAGTTCAAT TTCACTAGAA AATGAGGAAA ATCTCCCCAC AATAAAACGC    4980

      ATAGTATCAG GTATTGTGTA CTGACCCCAA ACAGTTAGAC AATTAATTTA TCCGAAGGAT    5040

      TTAGTTCTGT ACTGCACAGG ACTAAGTCCT TTTAGTTTTA CCTTAATTCG TTTGTTGTTG    5100

      TAGTAATCAA TATAGTCTAT AATGACTTGT TCCAATTGGT TAAGTGATTT AAATGTTTTC    5160

      TCATAGCCAT AAAACATTTC GGATTTTAAA ATGCCAAAGA AAGATTCCAT CATACCGTTG    5220

      TCTTGGCTGT TTCCCTTGCG TGACATAGAT GCTTGAATTC CCTTATTCTC TAGGAACCGA    5280

      TGATAAGAAT CGTGTTGGTA TTGCCAGCCT TGGTCACTAT GGAGAATCGT ATTCTCGTAG    5340

      TGCTTCTCTT TGAATGCCTG TTCCAACATT GTTTGTACTT ATTCTAAATT AGGCGAACAA    5400

      GAAAGATTAA AAGCAATAAT TTCGCTGTTA AAGCCATCTA AAACTGGTGA TAAGTAAAGC    5460
```

781

```
TTTTGAGTAC TTGCTGGAAT GGCAAATTCA GTCACATCTG TGTAGCACTT TTCCATTGTT       5520

TTAGAGCCTT CAAATTGGGC TTGAATGAGA TTCTCTGCCT TCTTACCAAC GTCTCCTTTA       5580

TGAGAAGAAT ATTTTCGTTT CTTTCGCATT TTAGCTTGTA AATTGAGTAC TTTCATCAAG       5640

CCTTGAACTC TTTTATGATT TACCAGATAA CCACGATTTC TTAGTTCTAA ATGAACCCGG       5700

CGATAAGCAT AATTTCCCTT GTGTTCGATA AAGATGGATT GAATTTCAGT TTTAAGCTCT       5760

TGGTCTTTAT CTGTTTTGTC TAGCTGTTTC AAGTGATAGT AGTAGGTCCA ACGAGCTAGT       5820

TTAATGGCTT CTAGAAGAAG ATCTAACGAA AACTCAGTCA TTAATTCTTG AACAATTTCT       5880

GTCTTTCTTC TTTCTCTTTT TCCTCCTTCA ATCGGAGTTC TCTTAACTTT TTTAGGATGG       5940

CATTCTCCGC TCTCAGGTAC TCTCCCTCTT GTTTTCTCAA CAATAGTATA CCCGTTTTTC       6000

CTGTATTGTG CTAGCCAGTT AAGAAGTATC GTACGACTTG GGAGACCGTA TTCAAGAGAA       6060

ACTCTATCTT TAGTCCAGCC TTCATGTCAG ACTTTATTAA CCCCAATTAT TCACCCCAAA       6120

TCTAAAAACC ATCCAGAATC CTTGCCTTAG CTTAGATCCT GGATGGTTTC TTTTTTCACC       6180

CAATGGGTGT TTTTTACTAG ACAAAAAAGA GTTTCCCCTT TATGGTATAA GTGTAGAAAA       6240

AAACACAAAA AGAAAGGAAA CTCACATGAA CAGTTTACCA AATCATCACT TCCAAAACAA       6300

GTCTTTTTAC CAACTATCTT TCGATGGAGG TCATTTAACC CAGTATGGTG GTCTTATCTT       6360

TTTTCAGGAA CTTTTTTCCC AGTTGAAACT AAAAGAGCGG ATTTCTAAGT ATTTAGTAAC       6420

GAATGAmCAA CGCCGCTACT GTCGTTATTC GGATTCAGAT ATCCwTGTCC AGTTCCTCTT       6480

TCAACTGTTA ACAGGTTATG GAACGGAATA TGCTTG                                6516
```

(2) INFORMATION FOR SEQ ID NO: 106:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 14654 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106:

```
TTTTCAACCC ATATCGTGGC TCCTGAATAC TACTTACTGA CAACTATGCT ATCAGAGACT        60

TCTCTACTTG TTTTCTATAT CATTTTCATC CATAGAAAAC AACTCATCCA CTTGGGACAT       120

ATCTTTAGCT ATACTGTTCG ATACTCTCTC TTTTCACTTT CCTTTGTAGC AATTTATTTC       180

CTGATTAATT TCGTGTATCC TGTAGATATG GTCATTAATT TGCCATTTTT GATTAATACT       240

GGTTTGATTG TCTTGCTATC AGCTATCTCT TATATTAGTC TACTTGTCTT CACAAAAGAT       300
```

782

```
AGCATTTTCT ATGAATTTTT AAACCATGTC CTAGCCTTAA AAAATAAATT TAAAAAATCA        360

TAGGAGTTTA AAATGAAACA ACTAACCGTT GAAGATGCCA AACAAATTGA ATTAGAAATT        420

TTGGATTATA TTGATACTCT CTGTAAAAAG CACAATATCA ACTATATTAT TAACTACGGT        480

ACTCTGATTG GGGCGGTTCG ACATGAGGGC TTTATCCCTT GGGACGACGA TATTGATCTG        540

TCCATGCCTA GAGAAGACTA CCAACGATTT ATTAACATTT TTCAAAAGGA AAAAAGCAAG        600

TATAAGCTCC TATCCTTAGA AACTGATAAG AACTACTTTA ACAACTTTAT CAAGATAACC        660

GACAGTACGA CTAAAATTAT TGATACTCGA AATACAAAAA CCTATGAGTC TGGTATCTTT        720

ATCGATATTT TCCCTATAGA TCGCTTTGAT GATCCTAAGG TCATTGATAC TTGTTATAAA        780

CTGGAAAGCT TCAAACTGCT GTCTTTCAGT AAACATAAAA ATATTGTCTA TAAGGATAGC        840

CTTTTAAAAG ATTGGATACG AACAGCCTTC TGGTTACTCC TTCGACCGGT TTCTCCTCGT        900

TATTTTGCAA ATAAAATCGA GAAAGAAATT CAAAAATATA GTCGTGAAAA TGGGCAATAT        960

ATGGCTTTTA TCCCTTCAAA ATTTAAGGAA AAGGAAGTCT TCCCAAGTGG TACCTTTGAT       1020

AAAACAATCG ATTTACCCTT TGAGAATTTA AGCCTTCCTG CACCTGAAAA ATTTGATACT       1080

ATTTTGACAC AATTTTATGG AGATTATATG ACCCTACCAC CAGAAGAAAA ACGCTTCTAC       1140

AGTCATGAAT TTCACGCTTA TAAATTGGAG GATTAGGATG CAATATTTAG AAAAAAAAGA       1200

AATTAAAGAA ATTCAACTAG CCCTGCTGGA CTATATTGAT GAGACTTGTA AGAAACATGA       1260

TATTCCTTAT TTTCTCAGTT ATGGAACCAT GCTTGGAGCC ATCCGCCACA AAGGTATGAT       1320

TCCTTGGGAT GATGATATTG ATATTTCCCT TTATCGTGAG GATTATGAGC GTTTACTGAA       1380

GATTATTGAA GAAGAAAATC ACCCTCGCTA CAAGGTTCTT TCCTACGATA CATCTTCTTG       1440

GTACTTCCAT AATTTCGCAT CGATTTTGGA CACTTCTACT GTTATAGAAG ACCATGTTAA       1500

GTACAAGCGT CATGATACCA GCCTTTTCAT CGATGTCTTC CCAATTGATC GATTTACAGA       1560

CTTGAGCATT GTCGACAAGA GCTATAAGTA TGTGGCTCTT CGTCAACTAG CTTATATCAA       1620

AAAATCACGA GCAGTTCACG GTGATAGCAA ACTAAAAGAT TTTCTTAGAT TATGTAGCTG       1680

GTACGCTCTC CGATTTGTCA ATCCTCGCTA CTTTTACAAG AAAATTGATC AACTAGTCAA       1740

AAATGCTGTA ACCAACACTC CTCAATATGA AGGAGGAGTT GGGATCGGTA AGGAAGGGAT       1800

GAAAGAAATC TTCCCAGTTG ATACCTTTAA AGAACTGATT TTAACTGAGT TTGAGGGCCG       1860

TATGTTGCCT GTTCCCAAAA AATATGACCA ATTTTTAACC CAGATGTATG GCGATTATAT       1920

GACACCACCA TCAAAGAAA TGCAAGAGTG GTATAGTCAT AGCATTAAAG CTTATCGCAA        1980

AAACTGATTG AGGGGGATTA TACAAACTAC TAAGATAGAG GTTATTCAAA AACATAATTT       2040

TAGTAGAAAA TGAAATACAT ATTCCCACAA TAAAACGCAT CATATCAAGG TTTTTGAAAA       2100
```

783

```
ACCTTGATAT GATGCGTTTT ATAATTTTAA AGACTTTTTT CTATAGTAGA TTGAAATAAG    2160

ATGCGAACAA ATCAATTAGA AAATTCAAAT TAATTTATAG AAATATTTTA GTATTCCTGT    2220

GTACTGTTCT AAATTCAGTC TGCTATATCT TATTTTTCTA TTTAAATCGC TTCTGTAACA    2280

AAGCTACGAC TTTCAAGTAC CTTAAGCATG GCATTAGCTG TATCTAGCGC TGTGAAGAGG    2340

GGCACCCCGT GTTCAATGGC TGAACGACGA ATTTGCTCAC CATCTTCGTC AGCAGTTCGT    2400

TTTGTTCCTA CTGTGTTAAT GATAGCTTGA ATTCTTCCTT TGCGTACAAA ACTTGGGATA    2460

TCCTTATCGT CATCACCAAT CTTACCAACA GGTTGGGCTT GCAAGCCATG ACTAGCAAAG    2520

AAGGCTGCTG TCCCTTCTGT CGCAAGGATT CCATAACCAA TGTTTTGGAA ACGACGAGCC    2580

AAGTTCAAGG CTTCTTCTTT GGCATCATCA GCGATGGTAA AGACGACATT ACCAAAAGTT    2640

GGCAAGTGTA GATAAGAAGC TTCAAAGGCT TTATAGAGAG CTTTTTCCAA AGTAGCATCA    2700

GAACCCATAA CTTCACCTGT TGACTTCATT TCAGGACCGA GCAAGCTGTC TACCTTAGCT    2760

AGTTTGGTAA AGGAGAAGAC AGGTGCCTTG ATATGAACAC GGGTGCTTTC AGGGTAAAGT    2820

CCATTTTGGT AGCCAAGTTC TGATAAACTT TGACCAAGAA TGAGTTTGGT CGCTACTTGA    2880

GCCATAGGAA TATTGGTTAC CTTAGATAGG AATGGAACAG TACGGCTGGC ACGTGGATTG    2940

ACCTCAATAA CGTAGACTTT TTCATCCTTG ATAACAAACT GGATGTTCAT CATTCCAAGG    3000

CAGTGAAGAC CGATTGCTAA GCGTTTGGTG TAGTCTGCGA TGGTCTCCTG AACCTTTTGC    3060

GACAAGGTTT GTGGTGGGTA AACAGCCATT GAGTCACCTG AGTGGACACC AGCACGTTCG    3120

ATATGCTCCA TGATACCAGG AATGAGTACA TTTTTACCAT CTGAAATGGC ATCAACTTCG    3180

CACTCTTGCC CAACGATATA AGAGTCGACA AGAACTGGGT GGTCTGGACT AGCCTTAACA    3240

GCAGTTCGCA TGTAAGAACG AAGGTCTTCT TCGTTTTCAA CGATTTCCAT GGCACGTCCA    3300

CCAAGTACAT AAGATGGGCG GACAAGAACT GGGAAGCCAA TCTTGCGAGC TGCAAGAGCT    3360

GCTTCTTCTT CATTGGTAGC CGTTTGTCCT GGTGGCTGTG GAATATCCAA TTCTTTGAGA    3420

GCTTGCTCGA AGAGGTCACG GTCTTCGGCA CGATCTAGGT CAGCAACCTG TGTACCAAGG    3480

ATGGTCACAC CTGCTTTTGC CAATGGCTCC GCAAGGTTGA TGGCTGTTTG ACCACCGAAC    3540

TGAACGATAA CTCCCTTTGG TTGTTCCAAG TCAATGACGT TCATAACATC TTCGAATGTC    3600

AATGGCTCAA AGTAAAGCTT ATCTGATACA GAGAAGTCTG TTGAAACGGT CTCTGGGTTT    3660

GAGTTCATGA TGATAGCTTC ATAACCAGCT GCCTGGATAG CCTTAACAGA GTGAACGGTT    3720

GCGTAGTCAA ACTCAACCCC TTGACCGATA CGGATTGGAC CTGAACCTAG GACAAGTACA   ·3780

GATTCTTTAT CAGATCTGAT AGATTCATTT TCCCAACCAT AGGTTGAATA GAAATATGGC    3840
```

784

```
GTTTCGGAGT CGAACTCTGC CGCACAAGTG TCTACCATCT TATAAACTGG AACAATCTTG   3900

TTTTCCAAGC GAAGTTGGCG AACTTTATCA TCAGTCGTTC CCCAGAGTTC AGCAATCTTA   3960

CGGTCTGAAA AACCATTAAG TTTGGCTGTT TTCAAAACTT CTAAATCTTG TGGATGAGCA   4020

CCCAATTCTT GCTCAATTTC AAAGATATGC AAGAGTTTAT CAAGATAGAA GATATCAATT   4080

TTTGTAAGCT CTGCAATTTC TTCAGGTGTG TAGCCACGAC GAATGGCTTC TGATACGTAG   4140

AAGAGACGGT CATCTTGGGC TTTGACAACC TTTTCAATCA AGGCATCATC AGAAACTGCT   4200

GCAAGTTCAG GTATTTCATT GTGGTGCACC CCAATTTCAA GGGAGCGGCA GGCCTTGAGA   4260

AGAGATTCCT CGATGTTACG ACCGATTGCC ATGACTTCTC CAGTCGCCTT CATTTGTGTA   4320

CCGAGACGGC GTTCACCCTT TTCAAACTTG TCAAATGGGA AACGTGGAAT CTTAGCAACT   4380

ACGTAGTCAA GGGCTGGTTC AAACATGGCA TAGGTTGAAC CTGTAACTGG GTTTATAACC   4440

TCATCCAAGG TCAAACCTAC TGCAATCTTG GCAGCCAACT TAGCAATCGG ATATCCTGTC   4500

GCTTTAGAAG CAAGGGCTGA CGAACGTGAT ACACGAGGGT TTACTTCGAT AACATAATAC   .4560

TTGAAGCTGT TAGGATCAAG AGCTAGCTGA ACATTACATC CACCTTCAAT CTTGAGGGCA   4620

CGAATAATGC TCAAGCTCGC ATCACGAAGC ATTTGGTTTT CATAGTCTGA CATGGTTTGC   4680

GCAGGGGCAA ATACAATGGA ATCCCCTGTG TGAATCCCAA CTGGGTCAAA GTTTTCCATG   4740

TTACAAACAA CCAAGGCATT GTCAGCTGAG TCACGCATCA CTTCGTATTC AATTTCCTTG   4800

AAACCGGCAA TCGAACGCTC AATCAAACAT TGGCTAACAG GTGACAATTT CAAACCATTT   4860

TCAGTGATTT CACGCAATTC TTTCTCGTTG GCACACATAC CACCACCAGT ACCACCAAGG   4920

GTAAAGGCTG GACGAACGAT GACTGGGTAG CCAATTGTCG CTGCAAAGGC AACTGCTTCT   4980

TCTACTGTGT TAACAATTTC AGATTCTGGA ATGGGTTGTT CAAGCTCTTC CATCAATTGT   5040

TTAAAGAGGT CACGGTCCTC CGCTTGGTCA ATGGCAGATA ATTTGGTACC CAGAAGTTCA   5100

ACGCCAAGCT CGTCTAGGAT ACCATTTTTA GATAATTCCA TGGCCATGTT GAGACCTGTC   5160

TGACCACCGA GTGTTGGTAG CAAGGCATCT GGACCTTCCT TACGAAGAAT ACGTGTCACA   5220

AACTCAAGTG TAATCGGTTC AATGTAAACC TTGTCAGCAA TTTCCTTGTC CGTCATGATG   5280

GTTGCAGGAT TTGAGTTAAC CAAAACAACC TCATAACCTT CCTCTTTCAA CGACAAGCAA   5340

GCCTGAGTCC CAGCGTAGTC AAACTCAGCA GCCTGACCAA TAATAATCGG ACCAGAACCA   5400

ATCACCATAA TTTTTTGAAT ATCAGTACGT TTAGGCATAT ATAAGATATT AAGGGTGTCA   5460

AGCGGACAAA GCTAAAATAG GAGTTATGAC GAAGAACTGT CAGTTCTAGG AATAACTATC   5520

TTTTTAGCAC CGTCCGTAGC CCGTATTCAG TTCAGCAAAT ACGGAGCACC CTTCTCCTTT   5580

CTATTCGTCG CCTCTCAGGG CGACATTAAA TAAGATACAA AGGACGAATA GAAAGCGATT   5640
```

785

```
GAATTTTAGG AAATCAAGGA AGGATTGACA ATCCAAGTTG GTTTCTCTAC ATTCTGAGCT      5700

TTCCGTCCGT GTTCAGTTAC ATAAATTCTC CGACGAGCTT TTACTCGTTC TTAGTTTGAT      5760

TGTTTAAAAA CTTCCATCAT CTCGATAAAC TCGTCAAATA GGTAGCTAGC GTCGTGTGGC      5820

CCAGGAGCTG CATCTGGGTG GTATTGAACA GAGAAAGCAG GTTGGTATCT GTGGCGCACA      5880

CCTTCCACTG ACTTGTCATT GATTTCTTCG TGGGTAATAA TCAAGTGCTC TGGCAAATCC      5940

TCGCGGCTGA CTGCATAACC ATGGTTCTGG CTGGTGAAGT CTACTCGTCC TGTTGCGATT      6000

TCACGTACCG CATGGTTGAA TCCACGGTGG CCAAACTTCA TCTTATAGGT CTTAGCCCCG      6060

TTTGCCATTG CAAAGAGTTG GTGTCCCATA CAAATACCAA AGATTGGAAT TTTTCCTTGT      6120

ACACCGCGAA TCATGTCGAG TGCTTGTGGA ACGTCTTCTG GGTTACCTGG ACCATTTGAC      6180

AACATAACTC CGTCAGGATT GAGATGGAGA ATTTCTTCAG CCGTTGTCGA ATAAGGAACA      6240

ACTGTCACGT TACAGTTGCG TTTAGAAAGT TCACGTAGGA TTGAGTGCTT GAGACCAAAG      6300

TCCACTAGCA CCACGCTCAA ACCAACTCCT GGAGCTGGAT AAGACGTTTT AGTAGAAACC      6360

TGTTTGATAT TGTCTGTCGG TAAAACTGTT GCTTGGAGCT GGTCCGTCAC ATGGTCCATA      6420

CTGTCCCCAA CATGGGTCAA GGTTGCACGC ATAGTACCAT GCTTACGGAT AATCTTGGTA      6480

AGAGCACGCG TATCAATTCC TGAAATCCCT GGAATTTTCT TGGCTTTCAA AAATTCATCC      6540

AAGGTCATTT GGTTGCGCCA GTTGCTAGCT CTACGCGCTT CTTCAAAAAC AACGACTCCC      6600

TTACAAGTTG GAATAATGGA TTCATAATCA TCACGATTAA TACCATAATT TCCTACCAAA      6660

GGATAAGTAA AGGTCAAGAT TTGTCCATTA TAAGACTGGT CTGTAATGGA TTCTTGGTAG      6720

CCGGTCATCC CTGTATTAAA GACGATTTCG CCTGTTACAT CAATATCTGC TCCGAAGGCC      6780

TTGCCTTCAA AAACTGTGCC ATCTTCTAAT ACTAGAATTC TTTTTGTCAT ATTTTCACCT      6840

CTCGTGGACG CTCACTGGCG TCTTTTAACG TCTTGTGTTT TAGTTGGCGT TTCTACTCGC      6900

TAGTACGGAT TCTAAGATTG CCATTCGAAC AAAGACACCA TTGGTCATTT GTTGGACAAT      6960

CCGTGATTTT GGTGCTTCAA CCAAGTGGTC TGCTATTTCT ACATCACGAT TGATTGGAGC      7020

TGGGTGCATG AGGATTGCTG TTTCTTTCAA ACGATCGTAA CGTTCTTGAG TCAAGCCATG      7080

TTGGGCATGG TAGTCTTCTT TTGAAAATAC AGCTCCACTA TCATGGCGTT CGTGTTGCAC      7140

ACGGAGAAAC ATCATGACAT CAACCTGATC AATGATTTCA TCAATGGTTA CAAACTGTCC      7200

ATAGTCTGCA AACTCTTGAC TTCTCCATTC CTCAGGTCCA GCGAAAAAGA GTTCAGCTCC      7260

CAAGCGTTTC AAAATCTGCA TATTGGATTT GGCAACGCGT GAGTGGTCCA AGTCACCTGC      7320

AATAGCAACT TTAAGACCCT CAAAGTGGCC AAATTCCTCA TAAATGGTCA TCAAATCAAG      7380
```

786

```
CAAGCTCTGG CTAGGGTGTT GGCCCGAACC ATCTCCACCA TTGATGATGG AAGTCGTAAT    7440

CGTTGGACTA GCAATCAATT CTCTATAGTA GTCGACCTCT GGATGGCGAA TCACACAGAC    7500

ATCCACTCCT AAAGCAGACA GAGTCAAAAT GGTGTCATAA AGTGTCTCAC CCTTATTAAC    7560

CGAGCTAGTC TTCACATCAA AGTCAAGTCG TTCCAATCCA AGTTTAATCT CTGCGACTTC    7620

AAAGGACTTA TGTGTCCGTG TAGAATCCTC AAAGAAGAGA TTGGAAACAA TCGGATGGTC    7680

TTCATAGGGA AGCTGGGCTC CATTTTTAAA CTCAATTCCT CGCTTGATCA ATTTCATTAC    7740

TTGATCGACA GTGAGGTCTT CCATGGACAC CACATGGTTC AATGCTTGTT GATTTTCTGA    7800

CATGGCTACT CCTTTAACTT TCTAAGCTTC TTCAGTAATC AGAACTCTGT CTTGGTCATC    7860

AAGTTCTGTC ATCTCTACGA TGATTCTTC AGAACGACTG GTTGGGATAT TTTTTCCAAC    7920

GTAATCTGGA CGGATTGGCA ATTCTCTATG TCCACGATCG ACTAGAACTG CTAAACTCAC    7980

ACGCGCAGGA CGACCATGAC CGACAATATT ATCAATAGCA GCACGGATGG TACGACCTGT    8040

ATAGAGCACA TCATCCACCA AGATAACTTC GCGGTCTGTC ACATCGACAG AAACCAAAGA    8100

AGTATCTTCT CCACTTTTAA CATCATCACG GAAAGGTTTA GTATCCAATT CCACAACAGG    8160

AACTGAAAGA TTTTCTAACT GCTTCAAACG TTCTTGGATT CGGTGGGCAA TAAAGACACC    8220

ACGAGTTTTA ATACCAGCCA AGACGATCTT ATTCAAATCT TTGTTGCGTT CGATAATCTC    8280

ATAAGTAATA CGCGTAATCG CTCGTTTGAC GGTCAATTCG TCTACAACTT CTTTTGTTTT    8340

CATGACAAAC CTCCAAAAAG AAAAGTCTCC TTAAACAAGG AGACTTGAAA TTTATAGCCA    8400

AGCGAGCCCT ACTGCACACA GTATAGACTT CACCCTTCTA CTTTATCGCG CTCCTTGCCT    8460

GCCTCACGGG ACAGGTTTAA AGGAATATTT AGTTATCATT TACTATAGCA CAAAGCATGC    8520

TTAAAATCAA GCAAAAAGTT TCAATGTAGC ATCTTACAAA TTGCTAAAAT CATATAATTG    8580

TGGGTACTGG TCACACTCTG GATTTTTTGG ATGGCAAATG GCTCTTCCAA AATAAATCAT    8640

GGCCTGATGG GCAGCTAACC ACTGCTCAGG CGGCAAGATA TCCATGACCC GCTTTTCCAC    8700

CTCAAGTGGC GTCGCTGATT TTTTGACAAT ATCGTGGTGT TTGCAAATAC GCTCCACATG    8760

AGTATCCACT GCAAAGGCTG GAATTCCAAA TCCTACACTC ATGACAACAT TGGCTGTCTT    8820

GCGACCAACA CCTGCCAAAC TCTCCAATTC TTCACGTGTC TGAGGGACTT GACCATCAAA    8880

ATCGTCTAGT AACTGTTGGG CACATTTTTT AAGGAATTTA GCTTTATTCC GATACAATCC    8940

CAAGCGAGAA ATATGTGAAG CAATCTCACT CTCTGTCGCT ACAGACATAG CTTGGGGTGT    9000

TGGAAAGGCA ACAAAGAGAC CTGGTGTGGC CTTATTTACC GCTGCATCTG TCGTCTGGGC    9060

TGATAACATG ACCGCAACCA GGAGTTCAAA ATGATTGGTA AAATCAAGAC TAGGCTTGGC    9120

ATCTGGGAAG AGGGCAATGA TTTCTTCTAG CACCTTTCGT GCTCGTTTTT TTGACAAGAC    9180
```

787

```
CATTATTCAT CTCCGTCAAA TAGTCCTTGT AAGCCAGCAA AAGGACTGTT TTCTTCTTTC     9240

TTTACTGCTT TTTGAGCTTG GTATTCTTCC TCTGTCATGA TTTGCCAGTC ATTTCCTGAG     9300

ATAAATCCTT GACCAGCTTC TTCTTCAGCC GTCAAGACCT TGATAGGAAT GTTTAGCAGG     9360

ATATTGTCTG ATACACTCTC AGCAAGGTCA AGCTCCCCAT TTTCGATGGG CAAGACCAAG     9420

TCATCATCTA AAACTTCTTG ATCTAGCTGG TTAGTTGCGC CTTCCATGAA AACTTCCGTG     9480

ACTGGATAAG ATTCAACTAA CTCAACTGGC TCCATACTGC GACTCGACGC AAGAACAATG     9540

GTATAAGATA GTTGATAATC TAAGAAATAC ATACGGTCTT CATATTGTAC TTTCCCAACT     9600

GCAAGGATAT CTTTTACATC TAAAATTTCT TGATTACGTG CACGCAGGTC ATCAACTAAA     9660

TCTAACGTTT GTTCAAAGTT CAAACCTTCA GACTGCTTAC GAATTTCTTG AATATTTAAT     9720

TTCATACTTC CTCCATAAAG ATTTACTCTC TTGATTATAC CATGAAAAGG CTACAAATCA     9780

GCACACCAAA CTTTGTAATT AAAATTCAAA ATTTTAACAT ATTTACTATG ATAGTTTTAT     9840

TTTTTAGTGC TATACTATAG GGAAAGAGTA CATCAGATCA AGGAGGATGC TCACATGGAA     9900

GACAAGAAAC TCATTCAACT CCTATCCAAG TTAAATAAAA GCTACCAAAA CTGTAAACAG     9960

GGTACGGCAG ATGATATTCG ACTACAAGAG CTGCTAAACA CTACTATGCA AGAGCTCAAA    10020

AAAACGGAAC AGTTGAACAA CAGTATCTTA ATTGATCTTG AGAAATTTTA CCAACCTACC    10080

AGTCTTCTGA TTGGACTGGG TAGCCTAAAA CTAAACGATC AAGCACGCAC TGCTTGGCGA    10140

AACTATGATA AATTCCATTA CGATCATGTC AAACACGTAC TAAGTCTCTA TGGACCTGTT    10200

TTTGAATTTT AGAGCATAGA ATTTCCAGTT TTCTGTTGAC AAAATTTCCT TAAAGGTATA    10260

ATATAAAGAT ACTAATACTC GGAGGTAAGG GAGACATGAA CAACTAAGTC TATCAAATAA    10320

AGAACCTTTA TTTAGTAGAT CTTGTTTTTG TCTCTTTTTG TGTGCTCTTT TATGCTCTTT    10380

TTCTGGCATG TTAATAGAGT TTTTTTGACA TAGACTTTGG GCTCTACTAG GTAAAGTAGA    10440

GCTTTTTGTT ATGCACTATG AACATTCTAG AAAGGGAAAT CATATGATAA AAATCAATCA    10500

TCTAACCATC ACACAAAACA AAGATTTACG AGATCTTGTA TCTGACCTAA CCATGACCAT    10560

CCAAGACGGG GAAAAGGTTG CTATTATTGG TGAAGAAGGA AATGGCAAAT CAACCTTACT    10620

TAAAATTTTA ATGGGGGAAG CTTTGTCTGA TTTCACTATC AAGGGAAACA TCCAATCTGA    10680

CTATCAGTCA CTGGCCTACA TTCCTCAAAA AGTCCCTGAG GACCTAAAAA AGAAAACTTT    10740

ACACGACTAC TTCTTTTTAG ATTCTATTGA TTTAGACTAC AGTATCCTCT ATCGTTTGGC    10800

GGAGGAATTG CATTTTGATA GCAATCGTTT CGCAAGTGAC CAAGAGATTG GCAATCTATC    10860

AGGGGGCGAA GCTTTGAAAA TTCAGCTTAT CCATGAGTTA GCCAAACCCT TTGAGATTCT    10920
```

788

```
ATTTTTAGAT GAACCTTCAA ATGACCTAGA CCTTGAGACA GTTGATTGGC TAAAAGGCCA      10980

GATTCAAAAG ACCAGGCAAA CCGTTATTTT CATTTCCCAT GATGAAGACT TTCTTTCTGA      11040

AACGGCAGAC ACTATTGTTC ACTTGCGACT GGTCAAACAC CGTAAAGAAG CGGAAACGCT      11100

AGTAGAGCAT TTAGACTATG ATAGCTATAG TGAGCAGAGA AAGGCTAATT TTGCCAAACA      11160

AAGTCAGCAA GCTGCTAACA ACCAAAGAGC CTACGATAAA ACCATGGAAA AACATCGGAG      11220

AGTTAAGCAA AATGTAGAAA CTGCGCTTCG AGCTACCAAA GATAGTACTG CCGGTCGCCT      11280

ATTGGCTAAA AAGATGAAAA CTGTCCTCTC ACAAGAAAAA CGCTACGAAA AGGCAGCTCA      11340

GTCCATGACT CAAAAGCCAC TTGAAGAGGA ACAAATCCAA CTTTTCTTTT CAGACATCCA      11400

ACCATTACCA GCTTCTAAAG TCTTAGTCCA ACTGGAAAAA GAAAATTTGT CCATTGACGA      11460

CCGAGTTTTG GTTCAAAAAC TACAACTAAC TGTCCGTGGC CAAGAAAAAA TCGGTATTAT      11520

CGGGCCAAAT GGTGTTGGGA AATCAACTCT GTTAGCCAAG TTACAGAGAC TTCTGAATGA      11580

TAAAAGAGAG ATTTCACTTG GTTTTATGCC ACAAGATTAC CACAAAAAAC TGCAATTGGA      11640

TTTATCCCCA ATAGCCTATC TCAGTAAAAC TGGGGAAAAA GAGGAACTAC AGAAAATCCA      11700

ATCTCACCTA GCTAGTCTCA ATTTCAGTTA TCCAGAAATG CAGCATCAAA TTCGCTCCTT      11760

ATCTGGCGGA CAACAGGGAA AACTCCTGCT TTTGGATTTA GTCCTGCGCA AACCAAACTT      11820

TCTCCTGCTG GATGAACCCA CACGAAACTT TTCTCCCACT TCTCAACCCC AAATCAGAAA      11880

ACTCTTTGCT ACCTATCCAG GCGGTCTCAT CACTGTTTCG CATGACCGTC GTTTCTTAAA      11940

AGAAGTCTGC TCGATCATCT ATCGCATGAC AGAACACGGT TTGAAGCTAG TTAATTTAGA      12000

AGATTTATAA ATTTGCAACA TAGCAAAAAT CCAGAGACGA CCTCTGGATT CTTTTACATC      12060

TGTTTTAAAC GTTCAATCCG TTCTGAGATA GGTGGGTGGG TATAAAAGAG TTTTTGGAAC      12120

CCCCCACCTT TCTTAGGATC ATTGATATAA AGGGCACTGC TAGCATCATC GACGTGGCGA      12180

CTCATAGGTT TGCTATTGTC CAACTTATCT AGGGCATTAA TCATTCCCTG GGGATTGCGA      12240

GTCAGCTCGA CACTAGATGC ATCTGCCAGA AATTCCCTCT GACGAGAAAT AGCGAGCTGA      12300

ACCAAGGTTG CAGCGAGAGG TGCCAGTACA ATAGCTAGTA GGGAAACCAC TAGCATAATG      12360

ATTTCAAGAC CATTTCCATC TCGGTCATCA TCACTTCGTC TGCGACCTGC TCCACCCCAC      12420

CACATCATAC GACCTGCCAT ACTAGAAAGC ATGGTGATAG CACTAGCAAG GGCAACTGCA      12480

ATAGTCGAAA TACGGATATC ATAATTACGA ATATGACTGA CTTCATGTCC CATAACAGCT      12540

TCTAGTTCTT CACGATTCAT GATAGCTAGT AGACCTGAAG TCGCAGCAAC AGCCGCATTT      12600

TGAGGATTAG AACCTGTCGC AAAGGCATTT AAGGCTGGAT CATCAATGAT GAAAACACGG      12660

GGCATAGGAA TCTGAGCGAC CAGAGCCATA TCTTCCACTA CATGGTAGAG GTCTGGTGCC      12720
```

789

```
GTTTGCTCAT CCACCTCACG CGCTCCATTC ATGGACATGA CAATCTCTGT CGATTGAAAA      12780

ATCATAGACA AAGCGTAGAT AAAGCCGATA ATCAGTGCAA TAACCAAACC ACCAAGTCCA      12840

GATCTTATAA AGAGATAACC AACCGCATAA CCAACAAGAG CTAAGAGTAG GAAAAATACC      12900

AGCAACAAAA TCCAGGTTTT TCGTTTATTG CTTGCAATTT GATCAAACAA CATCTTAGTC      12960

ACCTAAACCG CTAAAATCAA CTTTAGGAAC CGACTTTTCC TCTTCAGGTG TTTGAAGGAA      13020

ATCTGCCGCT TTAAATCCAA ACATTCCAGC GATAATATTG CTCGGGAAAG TTTCTAATTT      13080

TACATTGTAG TTGCTGACAA CACTGTTATA GAGTTGACGA GAGTAAGAAA TTTTATTTTC      13140

TGTGTTTGTC AACTCCTCTT GCAATTTAAC AAAGTTAGCA CTAGCTTTCA AATCTGGATA      13200

GCTTTCTGCA ACTGCAAAAA TACCTGAAAC CTGACGAGTG AGGGCATCAC TGGCTTTCAT      13260

AGCTTCTGCT GGTGAAGTCG CTGCCGCCAC TTGGTTACGT AGTTCTGCCA CCTTTTCAAG      13320

GGTAGAACCT TCATATTTGG CATAACCTTT TACAGTCTCA ATCAAGTTTG GCAAGAGGTC      13380

ATTGCGACGT TTCAACTGAA CATCAATCTG ACTCCAAGCC TCCTTGGTTT GCATACGATT      13440

TTTAACCAAA CCGTTATAGC TAACAATCAC AAAAATAACA ATAAGAGCGA TAACTCCAAG      13500

AATAATCCAA GTCATAATAT AAGTCCTTTC TGCTTTTAGA TTAGTACCAG TATATCAAAT      13560

TTTCTATGAT TGTGGTAAAA TAAGATGATA CTAAAGAAGG AAATAACTAT GAAACCAAAA      13620

ACATTTTACA ACTTGCTTGC CGAGCAGAAT CTTCCACTTT CGGACCAGCA AAAAGAACAA      13680

TTTGAACGTT ATTTTGAGCT CTTGGTCGAG TGGAATGAGA AGATTAATTT GACGGCGATT      13740

ACGGACAAGG AAGAAGTTTA TCTCAAACAT TTTTACGATT CGATTGCACC CATTCTTCAA      13800

GGTTTGATTC CCAATGAAAC TATCAAACTT CTTGATATCG GGGCTGGGGC AGGATTTCCT      13860

AGTCTACCAA TGAAAATTCT CTATCCGGAG TTAGATGTGA CCATTATTGA TTCACTCAAT      13920

AAGCGCATCA ACTTCCTACA ACTCTTGGCT CAAGAACTGG ATTTGAACGG AGTTCATTTC      13980

TACCACGGAC GTGCCGAAGA TTTTGCCCAA GACAAGAACT TCCGTGCTCA ATATGATTTT      14040

GTAACAGCTC GTGCGGTTGC CCGTATGCAG GTCCTATCTG AATTGACTAT TCCCTACCTT      14100

AAGGTTGGTG GCAAACTATT AGCACTCAAG GCTAGCAATG CGCCTGAGGA ATTATTAGAA      14160

GCTAAGAATG CCCTCAATCT CCTTTTTAGT AAGGTCGAAG ACAATCTCAG TACGCCCTAC      14220

CGAATAGAGA TCCGCGCTAT ATCACAGTGG TAGAAAAGAA AAAAGAAACA CCAAATAAAT      14280

ATCCACGTAA GGCTGGTATG CCAAATAAAC GCCCACTTTA AATTTTTTAG TAAACAAATG      14340

TTTACAAAAT CAGCCTCGCT CTTTTATTTC TAGGCTCGGG AAAAAATGAT TTACAAAATC      14400

AGCCTCGCTC TTTTATTTCT AGGCTCGGGA AAAAATGATT TACAAAATCA TTTTTTTCTG      14460
```

790

```
CTATACTATC CTAAGCAAAG GTTTTTAATG TCATCCCGTG AGGTGACGAA GACGCAGAAA    14520

TATTTAAAAC TCTTTAAAAT CTAAATTTTA AAGAAGTCTT ACTCTGAGGG CCTATTGCTG    14580

TAAAATAATG GGCTCTTTTT TGATGCCCAA AAGTGAGGTT TATATGAAAC AAGAATCAAC    14640

TGTTGATTTG TTAC                                                      14654
```

(2) INFORMATION FOR SEQ ID NO: 107:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 6405 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

```
AGAAAAATCT GCTTTACAGA AAATAAAAAT AATAGGAGAA AATCTATGTC AGATTTGAAA      60

AAATACGAAG GTGTCATTCC AGCCTTCTAC GCATGTTATG ATGATCAAGG AGAAGTAAGC     120

CCAGAACGTA CGCGTGCCTT GGTTCAATAC TTCATTGATA AAGGTGTTCA AGGTCTTTAT     180

GTCAATGGTT CTTCTGGTGA ATGTATCTAC CAAAGCGTTG AAGATCGCAA GTTGATTTTG     240

GAAGAAGTCA TGGCGGTAGC AAAGGTAAAT TGACCATTAT TGCCCATGTT GCTTGCAATA     300

ATACTAAAGA TAGTATGGAA CTTGCTCGCC ATGCTGAAAG CTTGGGAGTA GATGCTATTG     360

CAACGATTCC ACCAATTTAT TTCCGCTTGC CAGAATACTC AGTTGCCAAA TACTGGAACG     420

ATATCAGTTC TGCAGCTCCA AACACAGACT ACGTGATTTA CAACATTCCT CAATTGGCAG     480

GGGTTGCTTT GACTCCAAGC CTTTACACAG AAATGTTGAA AAATCCTCGT GTTATCGGTG     540

TGAAGAACTC TTCTATGCCA GTTCAAGATA TCCAAACCTT TGTCAGCCTT GGTGGAGAAG     600

ACCATATCGT CTTTAATGGT CCTGATGAGC AGTTCCTAGG AGGACGCCTC ATGGGGGCTA     660

GGGCTGGTAT CGGTGGTACT TATGGTGCTA TGCCAGAACT CTTCTTGAAA CTCAATCAGT     720

TGATTGCGGA TAAGGACCTA GAAACAGCGC GTGAATTGCA GTATGCTATC AACGCAATCA     780

TTGGTAAACT CACTTCTGCT CATGGAAATA TGTACGGTGT CATCAAAGAA GTCTTGAAAA     840

TCAATGAAGG CTTGAATATT GGATCTGTTC GTTCACCATT GACACCAGTG ACTGAAGAAG     900

ATCGTCCAGT TGTAGAAGCG GCTGCTGCCT TGATTCGTGA AACCAAGGAG CGCTTCCTCT     960

AATCTAAAAG GAGGTATTTA TGACATATTA CGTTGCAATT GATATCGGTG GAACCAACAT    1020

CAAGTATGGT TTGGTTGATC AAGAGGGGCA ACTTCTTGAA TCGCATGAAA TGCCAACTGA    1080

GGCGCATAAG GGTGGACCTC ATATCTTACA AAAGACCAAA GATATCGTAG CTAGTTATTT    1140

AGAAAAAGGC CCAGTAGCAG GTGTTGCCAT ATCTTCTGCT GGGATGGTGG ATCCGGATAA    1200
```

791

```
GGGTGAGATT  TTCTATGCTG  GGCCGCAAAT  CCCTAACTAC  GCAGGCACCC  AGTTCAAAAA    1260

GGAAATCGAA  GAAAGCTTTA  CTATTCCTTG  TGAGATTGAA  AATGATGTCA  ACTGTGCAGG    1320

TCTTGCTGAG  GCAGTATCTG  GTTCAGGCAA  GGGAGCAAGT  GTGACACTTT  GCTTGACCAT    1380

TGGAACCGGT  ATCGGTGGTT  GCTTGATTAT  GGATAGGAAA  GTCTTCCATG  GTTTTAGCAA    1440

TTCAGCCTGT  GAAGTCGGGT  ATATGCATAT  GCAGGATGGA  GCTTTTCAAG  ACTTGGCTTC    1500

TACAACAGCT  TTAGTGAAAT  ATGTAGCTGA  AGCCCATGGA  GAAGATGTTG  ATCAGTGGAA    1560

TGGCCGTAGA  ATTTTCAAAG  AAGCCACTGA  AGGAAACAAA  ATCTGCATGG  AAGGTATTGA    1620

CCGTATGGTT  GACTATCTAG  GAAAAGGTCT  GGCAAATATT  TGCTACGTTG  CCAATCCAGA    1680

AGTGGTTATT  CTTGGTGGTG  GTATCATGGG  GCAAGAGGCT  ATCCTCAAAC  CTAAGATCCG    1740

TACAGCCTTG  AAAGAGGCTT  TGGTACCAAG  TTTAGCAGAA  AAAACACGAT  TAGAATTTGC    1800

CCATCACCAA  AATACAGCAG  GGATGTTGGG  TGCATATTAT  CATTTTAAGA  CAAAACAATC    1860

CTAGTTTGGC  TCAGCCAAAC  TAGGATTTTC  TTACACGTTT  TTGTCTACGA  TAGCCGTTGA    1920

GTTTTTTATT  TTCCCAGTAG  CTATTAAAGA  TTTTTTCCTT  GCTTTCGCGA  TTGATTTCCA    1980

AAAAGTAGGC  ATAAATCAAA  TCGATAAAGA  AGAGCATAGG  AAGTTGAGCG  GATATTCGTT    2040

GGATATAGGA  GGGTTGGCTG  TGGGTGGCTA  CAAGAACAGT  CTCTGTATAG  GTCTGGCTAT    2100

CTTTATTGGG  AACACTTGTA  AAGAGTACAG  TCTTTGCCCC  CATCTCCTTA  GCATCTAATA    2160

GACTATCTAA  AATAGAAGGA  GTTGAGCCTG  AAAGTGAGAA  GCCCAGTACT  AGACAATTTT    2220

CATCCATGAT  GCTGGTTGTC  CAGGCAAAGC  CGTCTTGGTC  TGTCAAAGCT  TCGCAGACCA    2280

CACCTAGTCG  CATAAAACGT  AATTTCATTT  CACGGGCGAC  GAGGCCAGAA  CTCCCTGTTC    2340

CAAAGAAGTA  GATACGCTCA  GCATCTTCGA  TTAGCTGGGC  AATTCGTTCT  AGTTGGATTT    2400

CGTCAATCAA  GTCTTGTGTT  TGTTCCCTCA  TATTGCTATA  ACTTCTGAGG  ACTCGTTTGG    2460

TCAGTGGACT  GTGCTTGGAG  ACTTGGTTGG  CTTGATTTTC  TGCCTGATGT  TGGTATTGGA    2520

AAATAAATTC  TCGGTAGCCA  GTAAAGCCAC  ACTTTTTAGC  AAAGCGGGTC  AAAGCAGCTT    2580

GAGAAATATG  TAATTTTTGG  GTGACTTGTT  GAGAAGATAA  ATCATCTGTA  ATCGTTTCAG    2640

CTTGCAAAAA  ATAGCGAGCG  ATTTCTTGTT  CTAGGTCTGT  CATTTCTTCA  AAATGTGAAT    2700

CAATGATAGT  TGCGATATCT  GGTTTGTCCA  TAGGGAAAGC  TCCTTTACAT  GAGTCATACT    2760

GGAAGACTAG  ATCAGAGAAT  AGTCACACTT  CATTATAACA  CATAATATAA  GGATAGATAA    2820

ATAAAAACGC  ATCTCTGTTT  TAAAAACGAA  AAAATCGAAA  AAGCTTCTCT  CTTTTCCATA    2880

ATTTTCTACT  CAAATTGTGG  TACAATTAAG  AGTAAGATTT  TAAGTTAGAA  ATGAGACTGA    2940
```

792

```
TTTGTATGAG AAAATTTAAC AGCCATTCGA TTCCGATTCG GCTTAATTTA TTGTTTTCAA    3000

TCGTCATTTT ACTCTTTATG ACCATTATTG GTCGTTTGTT GTATATGCAG GTTTTGAACA    3060

AGGATTTTTA CGAAAAAAAG CTAGCTTCAG CTAGTCAGAC CAAGATTACA AGCAGTTCAG    3120

CCCGTGGGGA AATTTATGAT GCTAGTGGAA AACCTTTGGT AGAAAATACG TTAAAGCAGG    3180

TTGTTTCCTT TACGCGTAGC AATAAAATGA CGGCTACAGA CTTAAAAGAA ACAGCTAAAA    3240

AGTTACTGAC TTATGTGAGC ATCAGTTCTC CAAATTTGAC AGAACGCCAG CTGGCGGATT    3300

ACTATTTGGC TGATCCTGAA ATCTATAAAA AAATAGTGGA AGCTCTCCCA AGTGAGAAAC    3360

GCTTGGATTC AGATGGCAAT CGTCTATCCG AATCAGAACT GTATAACAAT GCGGTCGATA    3420

GTGTACAAAC GAGTCAACTA AACTATACAG AGGATGAAAA GAAAGAAATC TATCTTTTTA    3480

GTCAGTTAAA TGCTGTTGGA AACTTTGCGA CAGGAACCAT TGCGACAGAT CCTCTAAATG    3540

ATTCTCAGGT GGCTGTTATT GCCTCTATTT CAAAGGAGAT GCCTGGCATT AGTATTTCTA    3600

CTTCTTGGGA TAGAAAGGTT TTGGAAACTT CCCTTTCTTC TATAGTTGGG AGTGTATCCA    3660

GTGAAAAAGC TGGTCTCCCA GCGGAAGAAG CAGAAGCCTA TCTTAAAAAA GGCTATTCTC    3720

TAAATGACCG TGTAGGAACC TCCTATTTGG AAAAGCAATA TGAAGAGACC TTACAAGGAA    3780

AACGCTCGGT AAAAGAAATC CATCTGGATA AATATGGCAA TATGGAAAGC GTGGATACAA    3840

TTGAGGAAGG TAGTAAGGGA AACAATATCA AACTGACCAT TGATTTGGCT TTCCAAGATA    3900

GCGTGGATGC TTTACTGAAA AGTTATTTCA ATTCTGAGCT AGAAAATGGT GGAGCCAAGT    3960

ATTCTGAAGG TGTCTATGCA GTCGCCCTTA ACCCAAAAAC AGGTGCGGTT TTGTCTATGT    4020

CAGGGATTAA ACATGACTTG AAAACGGGAG AGTTGACGCC TGATTCCTTG GGAACGGTAA    4080

CCAATGTCTT TGTTCCAGGT TCGGTTGTCA AGGCGGCGAC CATCAGCTCA GGTTGGGAAA    4140

ATGGAGTCTT GTCAGGAAAC CAGACCTTGA CAGACCAGTC CATTGTCTTC CAAGGTTCAG    4200

CTCCCATCAA TTCTTGGTAT ACTCAGGCTT ACGGTTCATT CCCTATCACA GCGGTCCAAG    4260

CTCTGGAGTA TTCATCAAAT ACCTATATGG TCCAAACAGC CTTAGGTCTT ATGGGGCAAA    4320

CCTATCAACC CAATATGTTT GTCGGCACCA GCAATCTAGA GTCTGCTATG GAGAAACTGC    4380

GTTCAACCTT TGGCGAATAT GGCTTGGGTA CTGCGACAGG AATTGACCTA CCAGATGAAT    4440

CTACTGGATT TGTTCCCAAA GAGTATAGCT TTGCTAATTA CATTACTAAT GCCTTTGGGC    4500

AGTTTGATAA CTATACGCCG ATGCAGTTGG CTCAGTATGT AGCAACTATT GCAAATAATG    4560

GTGTTCGTGT GGCTCCTCGT ATTGTTGAAG GCATTTATGG TAATAATGAT AAGGGAGGAC    4620

TGGGTGACTT GATTCAGCAA CTGCAACCGA CAGAGATGAA TAAGGTCAAT ATATCCGACT    4680

CCGATATGAG CATCTTGCAC CAAGGTTTTT ATCAGGTTGC CCATGGTACT AGTGGATTGA    4740
```

793

```
CAACTGGACG TGCCTTTTCA AATGGTGCCT TGGTATCCAT TAGCGGAAAA ACAGGTACAG    4800

CCGAAAGCTA TGTGGCAGAT GGTCAGCAAG CAACCAATAC CAATGCGGTG GCCTATGCCC    4860

CATCTGATAA TCCCCAAATC GCTGTCGCAG TGGTCTTTCC TCATAATACC AATCTAACAA    4920

ATGGTGTAGG ACCTTCCATT GCGCGTGACA TTATCAATCT GTATCAAAAA TACCATCCAA    4980

TGAATTAGAA AGGAAATTAT GCTTTATCCA ACACCTATTG CCAAGTTGAT TGACAGTTAT    5040

TCTAAGTTAC CAGGTATCGG GATTAAGACG GCTACGCGTC TGGCCTTTTA TACGATTGGG    5100

ATGTCTGCTG ATGATGTCAA TGAATTTGCA AAAAATCTCC TTTCTGCTAA GAGAGAATTG    5160

ACATATTGTT CTATTTGTGG ACGTTTGACA GACGACGATC CTTGTTCTAT CTGTACTGAT    5220

CCGACTCGTG ACCAGACAAC AATTTTAGTT CTTGAGGATA GTAGAGATGT GGCAGCCATG    5280

GAAAATATCC AAGAATACCA TGGACTCTAT CATGTCCTTC ATGGCCTCAT TTCTCCTATG    5340

AATGGTATCA GTCCGGACGA TATCAATCTC AAGAGCCTTA TGACTCGTCT TATGGATAGT    5400

GAGGTTTCAG AAGTGATTGT GGCGACTAAT GCTACAGCGG ATGGTGAAGC GACTTCCATG    5460

TATCTTTCAC GTTTGCTCAA GCCGGCTGGT ATCAAGGTTA CGCGTCTAGC ACGAGGTCTC    5520

GCTGTGGGAG CGGACATTGA GTATGCGGAC GAAGTGACAC TCTTACGAGC CATTGAAAAT.   5580

CGGACAGAGT TGTAAGTGTA GGCAAATTTA CGAACTCCAT TCATTTATAA AAAATCAAAG    5640

AGGCTGAAAA TCGTTCCTAT CGGCCTCTTT TTGTATAGTG TGATGAGTAG GCTCAGGTTC    5700

AACTTTTAAA AAACCAAGCA AATATGATAT ACTAAAGAGC GAGTATTCTA GTAGAATTAG    5760

GACAAATAAT ATGAAACAAA CGATTATTCT TTTATATGGT GGACGGAGTG CGGAACGCGA    5820

AGTCTCTGTC CTTTCAGCTG AGAGTGTCAT GCGTGCGGTC GATTACGACC GTTTCACAGT    5880

CAAGACTTTC TTTATCAGTC AGTCAGGTGA CTTTATCAAA ACACAGGAAT TTAGTCATGC    5940

TCCGGGGCAA GAAGACCGTC TCATGACCAA TGAAACCATT GATTGGGATA AGAAAGTTGC    6000

ACCAAGTGCT ATCTACGAAG AAGGTGCAGT GGTCTTTCCA GTCCTTCACG GGCCAATGGG    6060

AGAAGATGGC TCTGTTCAAG GATTCTTGGA AGTTTTGAAA ATGCCTTACG TTGGTTGCAA    6120

CATTTTGTCA TCAAGTCTTG CCATGGATAA AATCACGACT AAGCGTGTTC TGGAATCTGC    6180

TGGTATTGCC CAAGTTCCTT ATGTGGCTAT CGTTGAAGGC GATGATGTGA CTGCTAAAAT    6240

CGCTGAAGTG GAAGAAAAAT TGGCTTATCC AGTCTTCACT AAGCCGTCAA ACATGGGGTC    6300

TAGTGTCGGT ATTTCTAAGT CTGAAAACCA AGAAGAACTC CGTCAAGCCT TAAAACTTGC    6360

CTTCCGATAT GACAGCCGTG TCTTGGTTGA GCAAGGAGTG AATGC                    6405
```

(2) INFORMATION FOR SEQ ID NO: 108:

794
. (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 11309 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

```
CGAGCTCGGG TACCGGGATT TTAAGGAGTT TGATATGTAT AACCTATTAT TAACCATTTT        60

ATTAGTATTA TCTGTTGTGA TTGTGATTGC AATTTTCATG CAACCAACCA AAAACCAATC       120

CAGCAATGTA TTTGATGCCA GTTCAGGTGA TTTGTTTGAA CGCAGTAAAG CTCGCGGTTT       180

TGAAGCTGTA ATGCAGCGTT TGACAGGGAT TTTAGTCTTT TTCTGGCTAG CCATTGCCTT       240

AGCATTGACG GTATTATCAA GTAGATAAGA AAATAATGGG CAGGACTAGG TCTTTGCCTC       300

TTTTTATTTT TAAAGGATGT TTGAGAAGGT TTTACAGTAA AAGAAAATTA AAAAATCTAG       360

AAAGAAAATA TGAAAGATAG AATAAAAGAA TATTTACAAG ACAAGGGAAA GGTGACTGTT       420

AATGATTTGG CTCAGGCTTT GGGAAAAGAC AGTTCCAAGG ATTTTCGTGA GTTGATTAAA       480

ACCTTGTCCT TAATGGAAAG AAAGCACCAA ATTCGTTTTG AAGAAGATGG TAGTCTGACA       540

TTAGAAATTA AGAAAAAACA TGAGATTACC CTCAAGGGGA TTTTTCATGC CCATAAAAAT       600

GGCTTTGGCT TTGTTAGTCT GGAAGGCGAG GAGGACGACC TTTTTGTAGG GAAAAATGAT       660

GTCAACTATG CTATTGATGG TGATACCGTC GAGGTAGTGA TTAAGAAAGT CGCTGACCGC       720

AATAAGGGAA CAGCAGCAGA AGCCAAAATT ATTGATATCC TAGAACACAG TTTGACAACA       780

GTTGTCGGGC AAATCGTTCT GGATCAGGAA AAACCTAAGT ATGCTGGCTA TATTCGTTCA       840

AAAAATCAGA AAATCAGTCA ACCGATTTAT GTTAAGAAAC CAGCCCTAAA ATTAGAAGGA       900

ACAGAAGTTC TCAAAGTCTT TATCGATAAA TACCCAAGCA AGAAACATGA TTTCTTTGTC       960

GCGAGTGTTC TCGATGTAGT GGGACACTCA ACGGATGTCG GAATTGATGT TCTTGAGGTC      1020

TTGGAATCAA TGGACATTGT ATCCGAGTTT CCAGAAGCTG TTGTTAAGGA AGCAGAAAGT      1080

GTGCCTGATG CTCCGTCTCA AAAGGATATG GAAGGTCGTC TGGATCTAAG AGATGAAATT      1140

ACCTTTACCA TTGACGGTGC GGATGCCAAG GACTTGGACG ATGCAGTGCA TATCAAGGCT      1200

CTGAAAAATG GCAATCTGGA GTTTGGGGTT CACATCGCAG ATGTTTCTTA TTATGTGACC      1260

GAGGGGTCTG CCCTTGACAA GGAAGCCCTT AACCGTGCGA CTTCTGTTTA CGTGACAGAC      1320

CGAGTGGTGC CAATGCTTCC AGAACGACTA TCAAATGGCA TCTGCTCTCT CAATCCCCAA      1380

GTTGACCGCC TGACCCAGTC TGCTATTATG GAGATTGATA AACATGGTCG TGTGGTCAAC      1440

TATACCATTA CACAAACAGT TATCAAGACC AGTTTTCGTA TGACCTATAG CGATGTCAAT      1500
```

795

```
GATATCCTAG CTGGCGATGA AGAAAAGAGA AAAGAATATC ATAAAATTGT ATCAAGTATC    1560

GAACTCATGG CCAAGCTTCA TGAAACTTTA GAAAACATGC GTGTGAAACG TGGAGCTCTC    1620

AATTTTGATA CCAATGAAGC GAAGATTTTA GTGGATAAAC AAGGTAAGCC TGTTGATATC    1680

GTTCTTCGGC AGCGTGGTAT TGCCGAGCGG ATGATTGAGT CTTTTATGTT GATGGCTAAT    1740

GAAACAGTTG CCGAACATTT CAGCAAGTTG GATTTGCCTT TTATCTATCG AATTCACGAG    1800

GAGCCTAAGG CTGAAAAGGT TCAGAAGTTT ATTGATTATG CTTCGAGTTT TGGCTTGCGC    1860

ATTTATGGAA CTGCCAGTGA GATTAGTCAG GAGGCACTTC AAGACATCAT GCGTGCTGTT    1920

GAGGGAGAAC CTTATGCAGA TGTATTGTCC ATGATGCTTC TTCGCTCTAT GCAGCAGGCT    1980

CGTTATTCGG AGCACAATCA CGGCCACTAT GGACTAGCTG CTGACTATTA TACTCACTTT    2040

ACCAGTCCAA TTCGTCGTTA TCCAGACCTT CTTGTTCACC GTATGATTCG GGATTACGGC    2100

CGTTCTAAGG AAATAGCAGA GCATTTTGAA CAAGTGATTC CAGAGATTGC GACCCAGTCT    2160

TCCAACCGTG AACGTCGTGC CATAGAAGCT GAGCGTGAAG TCGAAGCCAT GAAAAAGGCT    2220

GAGTATATGG AAGAATACGT GGGTGAAGAG TATGATGCAG TTGTATCAAG TATTGTCAAA    2280

TTCGGTCTCT TTGTCGAATT GCCAAACACA GTTGAAGGCT TGATTCACAT CACTAATCTG    2340

CCTGAATTTT ATCATTTCAA TGAGCGTGAT TTGACTCTTC GTGGAGAAAA ATCAGGTATC    2400

ACTTTCCGAG TGGGTCAGCA GATCCGTATC CGTGTTGAAA GAGCGGATAA AATGACTGGA    2460

GAGATTGATT TTTCATTCGT ACCTAGTGAG TTTGATGTGA TTGAAAAAGG CTTGAAACAG    2520

TCTAGTCGTA GTGGCAGAGG GCGTGATTCA AATCGTCGTT CGGATAAGAA GGAAGACAAG    2580

AGAAAATCAG GACGCTCAAA TGATAAGCGT AAGCATTCAC AAAAAGACAA GAAGAAAAAA    2640

GGAAAGAAAC CTTTTTACAA GGAAGTAGCT AAGAAAGGAG CCAAGCATGG CAAAGGGCGA    2700

GGGAAAGGTC GTCGCACAAA ATAAAAAGGC ACGCCACGAC TATACAATCG TAGATACGCT    2760

AGAGGCAGGG ATGGTCCTGA CTGGAACTGA AATCAAGAGT GTACGAGCTG CTCGAATTAA    2820

TCTCAAGGAT GGCTTTGCTC AAGTGAAAAA TGGAGAAGTT TGGCTGAGCA ATGTTCATAT    2880

CGCGCCTTAC GAAGAGGGCA ATATCTGGAA CCAGGAACCA GAACGTCGTC GTAAACTCCT    2940

GCTCCATAAA AAGCAAATTC AAAAATTGGA ACAAGAGATC AAAGGGACAG GAATGACCTT    3000

AGTTCCCCTT AAGGTCTATA TAAAAGATGG CTACGCTAAG CTTCTTTTAG GACTTGCCAA    3060

AGGGAAGCAT GACTATGACA AACGGGAGTC TATCAAACGT CGTGAGCAAA ATCGAGATAT    3120

CGCGCGTGTG ATGAAAGCTG TTAATCAGCG ATAAAAAGAG GAATTGAAAA TGGAAAAATT    3180

AGTTGCCTAT AAACGCATGC CTTTGTGGAA TAAACAAACA ATGCCTGAAG CTGTTCAGCA    3240
```

796

```
AAAGCACAAT ACAAAAGTTG GGACTTGGGG GAAAATTACT GTCTTGAAGG GAGCTCTCAA        3300

GTTTATTGAA TTGACAGAAG AAGGGGAAGT TCTAGCTGAA CACCTCTTTG AAGCAGGGGC        3360

AGACAATCCA ATGGCCCAAC CTCAAGCCTG GCACCGAGTG GAAGCTGCCA CAGATGATGT        3420

GGAATGGTAC TTGGAATTTT ATTGTAAACC TGAGGATTAT TTTGCTAAAA AATACAATAC        3480

CAATCCTGTT CATTCAGAGG TCCTAGAGGC CATGCAGACA GTGAAACAAG GGAAAGCTTT        3540

GGATTTGGGT TGTGGTCAGG GGCGTAATTC TCTTTTTCTA GCCCAGCAAG ATTTTGATGT        3600

GACGGCTGTA GATCAAAATG GACTAGCTCT TGAAATCTTG CAAAGCATTG TGGAGCAGGA        3660

AGATTTGGAC ATGCCTGTTG GCCTTTACGA TATCAATTCA GCTAGCATTG AACAAGAATA        3720

TGATTTTATC GTTTCAACAG TTGTTCTCAT GTTTCTACAA GCGGACCGCA TTCCAGCTAT        3780

TATTCAAAAT ATGCAGGAGA AAACCAGTGT TGGTGGTTAC AACCTTATCG TTTGTGCCAT        3840

GGACACGGAG GATTATCCTT GCTCGGTTAA CTTCCCATTC ACCTTTAAAG AAGGAGAACT        3900

GGCAGACTAT TACAAGGATT GGGAATTGGT TAAGTACAAT GAAAATCCAG GCCATTTGCA        3960

CCGTCGCGAT GAGAATGGCA ATCGTATTCA ACTACGCTTT GCGACCTTAC TAGCTAAGAA        4020

AATCAAGTAA ACACACATGA AGATTAGGAA TTTTCCTGAT CTTTTTTCTT TTTTACGAAT        4080

GATATAGAAA AGGAGGGAAT TCATGTTTGT TGCGAGAGAT GCTAGGGGAG AATTGGTAAA        4140

TGTGTTAGAG GATAAACTTG AGAAGCAAGC ATACACCTGC CCAGCTTGTG GAGGCCAGCT        4200

CCATTTGCGT CAAGGACCAA GTGTACGGAC GCATTTTGCC CATAAATCCT TAAAAGACTG        4260

TGATTTTTTC TTTGAAAATG AAAGTCCAGA ACACCTGGCC AATAAGGAAT CCCTCTATCA        4320

CTGGTTGAAA AAAGAGACAA AGGTTCAATT AGAGTACCCG CTTTCAGAAC TTAAACAGAT        4380

TGCGGATGTA TTTGTAAATG GCAATCTAGC TCTAGAAGTT CAGTGTAGTC CCTTGCCTCA        4440

GAAAGTCCTT AAAGAGCGAA GTGAGGGCTA TCGTAGTCAG GGTTACCAAG TACTGTGGTT        4500

GCTGGGTCAA AAACTGTGGC TCAAGGAGCG TTTGACTCGT CTACAGCAAG GTTTTCTTTA        4560

TTTCAGTCAA AACATGGGCT TTTATGTTTG GGAATTAGAC AAGGAAAAAC AAGTTTTAAG        4620

ACTCAAATAC CTGATTTACC AGGATCTCCG CGGTAAACTC CATTATCAAA TCAAGGAATT        4680

TTCCTATGGT CAAGGTAGTT TATTGGAAAT ATTGCGTCTT CCCTATAAGA GACAAAAAAT        4740

ATCTCATTTT ACAGTTCTG AGGACAAGGA CATCTGTCGC TATATCCGGC AACAACTTTA        4800

TTATCAAAAT CTCTTTTGGA TGAAAGAACA AGCAGAAGCC TATCAAAAGG GAGAAAATAT        4860

CCTGACTTAT GGACTGAAAG AATGGTATCC ACAAATTCGA CCAATAGTGG GCAAATTTTT        4920

CCAGATTGAA CAAGACTTGA CTAGCTATTA TCAGCACTTT TATACCTATT ACCAAAAAAA        4980

TCCTCAAAAT GATTGGCAAA AGCTTTATCC ACCAGCCTTT TATCAGCAAT ATTTCTTGAA        5040
```

797

```
AAATATGGTA GAATAGAAAG GATGGAGGAA TCTAATGGTA TTACAAAGAA ATGAAATAAA      5100

TGAAAAAGAT ACATGGGATC TATCAACGAT CTACCCAACT GACCAGGCTT GGGAAGAAGC      5160

CTTAAAAGAT TTAACAGAAC AATTGGAGAC AGTAGCCCAG TATGAAGGCC ATCTCTTGGA      5220

TAGTGCGGAT AACCTACTAG AAATCACTGA ATTTTCTCTT GAAATGGAAC GCCAGATAGA      5280

GAAGCTTTAC GCTTATGCTC ATATGAAGAA TGACCAGGAT ACACGTGAAG CTAAGTATCA      5340

AGAGTACTAT GCCAAGGCCA TGACACTCTA CAGCCAGTTA GACCAAGCCT TTTCATTCTA      5400

TGAGCCTGAA TTTATGGAGA TTAGCGAAAA GCAGTATGCT GACTTTTTAG AAGCTCAACC      5460

AAAGCTGCAG GTTTATCAAC ACTATTTTGA CAAGCTTTTG CAAGGCAAGG ATCACGTTCT      5520

TTCACAACGT GAAGAAGAAT TATTGGCTGG AGCTGGAGAA ATCTTTGGTT CAGCAAGTGA      5580

AACCTTCGCT ATCTTGGACA ATGCGGATAT TGTGTTCCCT TATGTCCTAG ACGATGATGG      5640

TAAAGAAGTT CAGCTATCTC ATGGGACTTA CACACGTTTG ATGGAGTCTA AAAAACGTGA      5700

GGTTCGCCGT GGTGCCTATC AAGCTCTTTA TGCGACTTAC GAACAATTCC AACACACCTA      5760

TGCCAAAACC TTGCAAACCA ATGTTAAGGT GCAAAATTAC CGTGCTAAAG TTCGTAACTA      5820

CAAGAGTGCT CGTCATGCAG CCCTCGCAGC GAATTTTGTT CCAGAAAGTG TTTATGCAAA      5880

TTTGGTAGCA GCAGTTCGCA AGCATTTGCC ACTCTTACAT CGCTATCTTG AGCTTCGTTC      5940

AAAAATCTTG GGGATTTCAG ATCTCAAGAT GTACGATGTC TACACACCGC TTTCATCTGT      6000

TGAATACAGT TTTACCTACC AAGAAGCCTT GAAAAAAGCA GAAGATGCTT TGGCAGTCTT      6060

GGGTGAGGAT TACTTGAGCC GTGTTAAACG TGCCTTCAGC GAGCGTTGGA TTGATGTTTA      6120

CGAAAATCAA GGCAAGCGTT CAGGTGCCTA CTCTGGTGGT TCTTATGATA CCAATGCCTT      6180

TATGCTTCTC AACTGGCAAG ACAATCTGGA CAATCTCTTT ACTCTTGTTC ATGAAACAGG      6240

TCACAGTATG CATTCAAGCT ATACTCGTGA AACTCAGCCT TATGTTTACG GGGATTACTC      6300

TATCTTTTTG GCTGAGATTG CCTCAACTAC CAATGAAAAT ATCTTGACGG AGAAATTATT      6360

GGAAGAAGTG GAAGACGACG CAACACGCTT TGCTATTCTC AATAACTTCC TAGATGGTTT      6420·

CCGTGGAACA GTTTTCCGCC AAACTCAATT TGCTGAGTTT GAACACGCCA TTCACCAAGC      6480

AGATCAAAAT GGGGAGGTCT TGACAAGCGA TTTCCTAAAT AAACTCTACG CAGACTTGAA      6540

CCAAGAGTAT TATGGTTTGA GTAAGGAAGA CAATCCTGAA ATCCAATACG AGTGGGCTCG      6600

CATTCCACAC TTCTACTATA ACTACTATGT ATATCAATAT TCAACTGGCT TTGCGGCCGC      6660

CTCAGCCTTG GCTGAAAAAA TTGTCCATGG TAGTCAAGAA GACCGTGACC GCTATATCGA      6720

CTACCTCAAG GCAGGTAAGT CGGACTATCC ACTTAATGTC ATGAGAAAAG CTGGTGTTGA      6780
```

798

```
TATGGAGAAG GAAGACTACC TCAACGATGC CTTTGCAGTC TTTGAACGCC GTTTAAATGA     6840

GTTTGAAGCC CTTGTTGAAA AATTAGGATT GGCATAAAAT GGTTGAATCG TATAGTAAGA     6900

ATGCTAACCA TAACATGCGT CGTCCTGTCG TCAAAGAAGA AATTGTAGAC TTGATGCGTC     6960

AGCGTCAAAA GCAGGTCACA GGTTTCTTGA AAGAATTGGA AGACTTTGCC CGCAAGGAAA     7020

ATATTCCTAT TATTCCCCAT GAAACGGTTG CTTATTTCCG TTTTCTTATG GAAACCATGC     7080

AGCCTAAAAA TATTCTGGAA ATTGGGACGG CTATCGGTTT TTCAGCTCTC TTGATGGCTG     7140

AACATGCGCC AAATGCTAAG ATTACAACTA TTGATCGTAA TCCAGAAATG ATTGGTTTTG     7200

CCAAGGAAAA TTTTGCCCAG TTTGACAGTC GCAAGCAAAT CACTCTCCTA GAGGGAGATG     7260

CGGTGGATGT CTTATCTACA CTGACAGAGT CTTATGATTT CGTCTTTATG GATTCTGCCA     7320

AGTCTAAATA CATCGTCTTT CTGCCAGAAA TCCTCAAACA TTTGGAAGTT GGTGGTGTGG     7380

TTGTCTTGGA TGATATTTTT CAAGGTGGTG ATGTTGCCAA GGATATTATG GAAGTCCGTC     7440

GTGGTCAGCG AACCATTTAT CGAGGCCTTC AAAAATTATT TGATGCAACC TTAGACAATC     7500

CAGAACTCAC CGCAACATTA GTGCCTTTAG GAGATGGTAT TCTCATGCTT CGTAAAAATG     7560

TAGCAGATGT TCAACTGTCT GAAAGCGAAT GATTTTCAGA AAAATTTAAG AAAAAATAGT     7620

AAAATAGATA GAGTAACACT TATCTCAAAG GAGTAGACAT GAAGAAAAAA TTATTGGCAG     7680

GTGCCATCAC ACTATTATCA GTAGCAACTT TAGCAGCTTG TTCGAAAGGG TCAGAAGGTG     7740

CAGACCTTAT CAGCATGAAA GGGGATGTCA TTACAGAACA TCAATTTTAT GAGCAAGTGA     7800

AAAGCAACCC TTCAGCCCAA CAAGTCTTGT TAAATATGAC CATCCAAAAA GTTTTTGAAA     7860

AACAATATGG CTCAGAGCTT GATGATAAAG AGGTTGATGA TACTATTGCC GAAGAAAAAA     7920

AACAATATGG CGAAAACTAC CAACGTGTCT TGTCACAAGC AGGTATGACT CTTGAAACAC     7980

GTAAAGCTCA AATTCGTACA AGTAAATTAG TTGAGTTGGC AGTTAAGAAG GTAGCAGAAG     8040

CTGAATTGAC AGATGAAGCC TATAAGAAAG CCTTTGATGA GTACACTCCA GATGTAACGG     8100

CTCAAATCAT CCGTCTTAAT AATGAAGATA AGGCCAAAGA AGTTCTCGAA AAAGCCAAGG     8160

CAGAAGGTGC TGATTTTGCT CAATTAGCCA AAGATAATTC AACTGATGAA AAAACAAAAG     8220

AAAATGGTGG AGAAATTACC TTTGATTCTG CTTCAACAGA AGTACCTGAG CAAGTCAAAA     8280

AAGCCGCTTT CGCTTTAGAT GTGGATGGTG TTTCTGATGT GATTACAGCA ACTGGCACAC     8340

AAGCCTACAG TAGCCAATAT TACATTGTAA AACTCACTAA GAAAACAGAA AAATCATCTA     8400

ATATTGATGA CTACAAAGAA AAATTAAAAA CTGTTATCTT GACTCAAAAA CAAAATGATT     8460

CAACATTTGT TCAAAGCATT ATCGGAAAAG AATTGCAAGC AGCCAATATC AAGGTTAAGG     8520

ACCAAGCCTT CCAAAATATC TTTACCCAAT ATATCGGTGG TGGAGATTCA AGCTCAAGCA     8580
```

799

```
GTAGTACATC AAACGAATAG TCCAAATCAA TGAGTCAGGG AAAAAACTCG ACTTCAGGAA      8640

AAAATGAAGC AAACATTCCC ACAATAAAAC GCATAGTACA AGGTTTGTAC TGCCCCCCAA      8700

AAAGTTAGAC AATTAATTTA TCCGAAGGAT TTAGTTCTGT ATTGCACAGA GCTAAGTCCT      8760

TTTAGTTTTA TCTTAATTCT CTTATTGTTG TAATAATCAA TATAGTCTAT AATGGCTCGT      8820

TCCAATTGAT TAAGTGATTT AAATGTTTTC TCATAGCCAT AAAACATTTC GGATTTTAAA      8880

ATGCCAAAGA AAGATTCCAT CCTACCGTTG TCTTGGCTGT TGCCCTTACG TGACATGGAT      8940

GCTTGAATTC CCTTACTCTC TAGGAAGCGA TGATAAGAAT CGTGTTGATA TTGCCAGCCT      9000

TGGTCACTAT GGAGAATCGT ATTCTCGTAG TGCTTCTCTT TGAATGCCTG TTCCAACATT      9060

AACGATCAAT CAATTTAATC ATGTACCTAA GATTAGAATT GTTTATCCCA AATTTATTTG      9120

AAAGCTTCTC TAAGCTATAT CCTTGTTTTC TAAGTTCATA GATCTGAACT TTATCATCAT      9180

AAGTTAATTT CATAATAAAA ACACCCCAAA AGTTAGATTT TTTCTGTCTA ACTTTTGGGG      9240

TGTAGTTCAT GTACACCTGA TATGATGCGT TTTATAATTT TAAAGACTTT TTGACCAGCC      9300

TCATTTTTTT AACTTGATAC TCAGTGAAAA GCAAAGATTA AACTAGGAAG CTAGCTGTAG      9360

GCTGCTCAAA GAACAGCTTT GAGGTTGTAG ATAAAACTTG TGAGGTCACC AACATATATA      9420

ATGTGAAGCT GACGTGGTTT GAATAGATTT TAGAAGAGTA TGAGTCTGGA AGTTTTAATG      9480

GATAATGCAA GATTCCATAG AATGGGTAAG CTAGAGTTCT TATGTGAAGA GTTTGGGCAT      9540

AAACTTTTAC CTTTTCCTCC CTACTCATCT TAGTATAGAA AAGTGAATCT GAAATAGTAC      9600

ATAACTGCTT CTAAAACATT CTTATAAATT GATTTAAATT CTCAAATCAT ATTATTCAGT      9660

TCTTATTTCA TTTTGTTCTA CAATCCTGTT GAGAAGACAC GTGTTCATAT CAAAAAGGTA      9720

TTGGCAAGTT GCAATACCTT TTTACGAGGC TCTGTTGTCT TATTTTTGTT TCAACTGACT      9780

ATATCTCCTA TGGTTCTAGT TCAGAAGGCT AGGCTATAAT TATGATTGAT AAGAAGTATC      9840

ATTCCAAGTA TTGGGAGTGA ATGTTTCAAA ATCATGGGTT TCTATAATGG TCAGGCTGGC      9900

ATTTGCTAGA CCGCCATCTT TACGAAGAAG TGGTTCTTTA TAGCCTAGGA GAGTACGAAG      9960

ACTGGCAGTA AGATTGGCGC CGTGTCCGAC AATTAGAATA CGTTCAGCTG GACTATCTTT     10020

TAATGATTTG ATAAATTGGA TGGTCCGTTG AGTTGTACTA TAGAGGGATT CGGCTCCGAA     10080

CATTCGAGTG TCAAATTGAG CAAGATTTGA ACGAAAAGCC TGGATTTGTT GCGGGTAAAT     10140

AGCTTCCAAG GTTGCAATTT TCAAACCTTC TAACTTCCCA AGTTGCCATT CACGGAGATT     10200

AGGAACGATT TCTAAAGAAC AGGGGGTATA GAGTTGACTT TGGATAATCT CAGCAGATTT     10260

GACCGCTCGA GGTAAATCAC TTGAATAAAT CTGATCAAAA GGAATTTCCT TGAGATACTG     10320
```

800

```
ACCAAGTCGT TTTAGGGTTT CAATGGATTC AGGAAGAAGA GGAGAATCAC CACTAGCACC     10380

TTGAAAACGA CCTTCTTGGT TCCAGAGGGT ACGACCGTGG CGGACAAAGT AGAGTTTCAT     10440

TACTTGATGT CCTCCAAAAT ATCTACAAAG TCTGCCTTTA CAAAGCTAGC CAAGTCTTGT     10500

GGCGCGACGA TAATGCTGTG TCCGACTTCG CCTGCAGAGA CAATCATTTG ATCCAAATCT     10560

AGAGCAATTT TATCGATAAA AATGGGATAA TTGTGTTTCT GACGAATTCC GACAGGATTA     10620

TTGGCTCCAT GAATGTAACC AGTTGTTTTT TCTAAGTCCT TTTGTGGAAT CATGCTCACT     10680

TTTTTATTGC CAGAAATTTT AGCTAGTTTC TTTTCAGACA AGTGCTGAGT GATAGGGACA     10740

ATTCCGATAA TCGGTCCGGT CTTGTCTCCC AAAAGCGCCA AGGTTTTGAA AATCTGATCT     10800

CGTTCATAAC CTTGAGGAAG CTCTCCTTCT AGGGCATTGA TTTGAATCCC CTGATGAGGG     10860

ATAGCTGCTT TAGATAGGAT TTGTTCCACC AATGTTTTTT TGATTTTAAC TTTTTTTGCC     10920

ATTATTTATA TTTATCCTCC AATTGACTCA TCCAAATACC AAGCCAGATT CCCAGCGCAA     10980

AGAAGAAGGC GATGATGACA TAACCGACAA GTGAAAGTCC TGTGTATTGG ATACTTTCAG     11040

CGTTTCCTGC ATTTGGAATT AAGATCAAAA GGGTACTTGA TAGGACGATA CCGATGATGA     11100

AATGATAGAC GAACTGTTTA CGGAGTTCTT CTAGTTCTCC GTCCGTCCAA GCGTAGGCCA     11160

CTTCTTCTTT CTTGCCTTTA CCTTTGGACA TCTTGTAAAG AGGTGGGAGG GCAATATAGA     11220

CATGACCTGC CTCGACTAGC GGACGCATGT AACGGTAGAA AAATGTCAAG AGCAAGGTCT     11280

GGATATGGGC ACCGTCGGTA TCCGCATCG                                     11309
```

(2) INFORMATION FOR SEQ ID NO: 109:

  (i) SEQUENCE CHARACTERISTICS:
    (A) LENGTH: 5548 base pairs
    (B) TYPE: nucleic acid
    (C) STRANDEDNESS: double
    (D) TOPOLOGY: linear

  (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

```
CCATAGTCTA ACAAGTCTTT GTAAAGGTTT ATCCCTGATT CATGTAAAGA TTGTGTAAAG       60

AATCAAAAAA AGCCACTTTT GAAAAATGGC TGCTCCTAAA AATAGCTTTA AAAATTATTA      120

GTCCTGTGCG AAAGATTGGT TAGGAAGAAA AATCGTGAAG CAACTGCCTC TGCCAAGCTG      180

ACTCGTCACC GTGACTTGGC CACCTAATAA TTGACTGAGT TCTTTGACAA TGGCAAGGCC      240

AAGACCAGTG CCACCAGTTT GTCTGCTTCG ACCTTTATTA ACTCGGTAAA AACGTTCAAA      300

AATACGATCC TGCTCTAATT GACTAATACC AATCCCTGTA TCTGATACAG AAATCTTAAT      360

GCCTTCGTTC ACCTTTTGGG TCTTGACCTC AATTTTTCCC CCTTGTTCAG TGTAACGGAT      420
```

801

GGCATTGGAT	AAAAGATTGA	GTAAGATTTG	GGAAAGTAAT	TGACTATCTG	ATACGAGGGT	480
GACATCATCT	GGCACCTGCA	CCTTTAGCTG	TAAATCCTTC	TTCTTGAGCT	GAGGTTGCAA	540
GCTTTGAGTC	AAATCCTGTA	CAAATTCTGC	CAAAGAAAGG	GTCGTCCATT	GTATAGGCAT	600
TTGTTGAGCC	TTAGATAAGG	TAAGAAGATG	CTCAACAATA	TGCTCAAGAC	GCAAACTTTC	660
TTTGTAAATA	ATGTCTAGAA	AGTCATCCTT	GAGCGCTTCT	TCTTCAGCTG	ACATCCCCTT	720
AATGGTTTCA	GCAAAGCCCT	TAATCGAAGT	AACTGGTGTC	CTCAATTCAT	GGGAGGCATT	780
TGAGACAAAG	GCTAAATTTA	ACTTTTCATA	AGTTCTAATC	GTTGTTAAAT	CATATAGCAA	840
GACGAGCACA	GCTTCCACAG	ATTGGGTGGG	GCTAAAAACG	GGAACTGCTG	TCACTTCTAA	900
AATCAAGTCA	CCCTCATGAA	ACCCACTTAC	TTCTTGTTTT	AACCTTGTTT	TTTGATCAAA	960
GGCTTGGTGA	ACTAAATTCC	GAATATCCAT	CCGTTTGAGG	TCATCAAGTG	AACTTATGTC	1020
GCCGTCCACA	TCGGGAAAAT	AATGAGGCAG	AGAGCGACTG	GATAATAACA	TCTGACCTTG	1080
AGCGGAAACT	AAAAACGTCC	CCATGGTTAG	GTGCGACAGA	AGAACCTCCA	TTGTTTCGGC	1140
TAGATCCTTG	TATTGCTGAT	CCTGTTGGGA	GACTTTGGTT	TTTAGGCCAG	ACACATACTG	1200
AGCCAAAGAC	TTTAAGTCTT	CTTGCCCTTT	TTCTAAAAAG	TATTCACTAC	TGGTCAAGAG	1260
AGGTTGGTGC	AAGGTCTCAA	AAGCAACTTC	CCATTTCCAA	AGGCAAAAGA	GCCAGTAGCC	1320
ACCTAGTCCC	AAAGAAAGGG	CTAGAAGAAA	GAGACCGATG	CCTTTACTGA	TCCAAGTTAA	1380
TGCCATCCCT	GCAATCAGAA	TGAGGCTAAC	ACTTAGATTG	ACTAGCCAAA	ATTGAAGGTA	1440
GCGTTTCATC	TATAACTCCT	TGAACTTATA	ACCATAACCC	CGAATGGTTC	GAATAAATTG	1500
AGGGGCTTTA	GGATTGTCTT	CAATTTTTTC	CCTCAACTTA	CCAATATGAA	CGTCCACCAA	1560
ACGTGTTTCC	TGCCCAAAGT	CATACCCCCA	GATACGTTCC	AAAAGACGCT	CTCTAGTCAG	1620
TGTCATGTTG	GGATGTTTCA	TAAGATAGAG	CAAGAGTTCA	AATTCTTTTG	GGGTCAAACT	1680
CAGTAACTTA	TTCGCCTTGT	AGACTTCATG	ACGCTCAGGG	TATACTTTCA	AGGTCCCAAA	1740
TAGCCAAGAA	TCGTCAGCGA	TATTATCTGA	ATCATCTCCT	TCTTGTTCTC	CTTTAGTTCG	1800
CCTGAGGACA	GCCTTGACAC	GCGCCAGCAA	TTCTCTAGGG	CTAAAAGGCT	TGGTCAGGTA	1860
GTCATCAGCC	CCTAATTCCA	AGGCCAAAAC	CTTATCAAAT	TCATCACTTT	TCGCAGAAAC	1920
CATCATAATT	GGAGTTTTGA	CGCCTTTGGC	TCTCAGCCGC	TTACAAACTT	CCATGCCATC	1980
TAATTGTGGT	AACATGATAT	CAAGCAAGAT	AAAATCAAAG	GGTTCTGTTT	CTGCCAAAGC	2040
TAAGGCCTTC	CGTCCATTTG	TCACCAATTG	AGTAGAAAAG	CCTTCCTTAC	TTAAATGGTA	2100
GTCAAGCAAT	TTCAGAATGT	GTTCTTCATC	ATCCACTAAT	AAGACTTGTT	TTGTCATCTA	2160

802

```
TTATCTCCTA TTGGTAACAT TATAACACAA TTATCAGAAA TCCTAACATT GCTAAATCAG   2220
ATTAAATTTG CCTATCAAGA CTAGTATCTG GTCAAACGCT CAATCATCTC CTTGTGCTCT   2280
GGATAGGTCG CCAGTAGATC TACCCTTTCA AATAATTCAA AATCCTCAAA TTCAAAACCA   2340
GGAGCAACAA GACAAGAAAC CAGAGCATCA TCCTTATCAA CTGTTGATCC CCAAATAGTG   2400
CCCTTAGGAA CACAGTAGTG AAGTTGTTGC CCTTTGGATA TGTCCAGGCC TAAAGTGACT   2460
GCTTCGTAGT GACCATCTGC TGTAATCATG TGAACAGTAA GTGGGGATCC TGCATGAAAA   2520
TACCAGATTT CATCTGCTGT CAATCGGTGA AAATGTGAAG GATTCGTTTC TTCTAATAAG   2580
AAATAAATAC TGGTATAAAG CGCCCTTCCC TTACCAGCAA GGTTTATAGT GTCTGAAGCT   2640
TTTTTTGTTT GTCTAAAATA GCCACCTTCA ATATGGGGAG CTAACTCTAG AGTTCTTATC   2700
AAGTCTTCTT TATCCGTCGG AGCCAATGGG TTGAAGTAAC TCTTGTTCAA AGTGGTTTTA   2760
CGATTTCAAG AACTCCTCTC AGTTCTGAGG ACACGGTAAT GATTGATGCG ACGGAAGTAC   2820
AAATCAATCG CCCTAAAAAA AGAATTAGCG AATGATTCTG GTAAAAAAAA TGCCACGCTA   2880
TGAAGGCTCA AGCGATTGTC ACAAGTCAAG GGAGAATTGT TTCTTTGGAT ATCGCTGTGA   2940
ACTATTGTCA TGATATGAAG TTGTTCAAAA TGAGTCGCAG AAATATCGGA CAAGCTGGTA   3000
AAATCTTGGC TGACAGTGGT TATCAAGGGC TCATGAAGAT ATATCCTCAA GCACAAACTC   3060
CACGTAAATC CAGCAAACTC AAGCCACTAA CAGTTGAAGA TAAAGCCTAT AACCATGCGC   3120
TATCCAAGGA GAGAAGCAAG GTTGAGAACA TCTTTGCCAA AGTAAAAACG TTTAAAATGA   3180
TTTCAACAAC CTATCGAAAT CATCGTAAAC ACTTCGGATT ACGAATGAAT TTGATTGCTG   3240
GCATTATCAA TCATGAACTA GGATTCTAGT TTTGCAGGAA GTCTATTATT TGGTTAGGTG   3300
AATTAGTGAA GCGTTTAGGC AAGTGTCTCT GGTTACGACG TCATGGACTC TAAATCGATT   3360
ATATTTAGGG GTCATGACTA GTGAAGCAGT TAGCTAGTTC GCATATAAGC GGCTAGCGTC   3420
TAACAATTAG GAACTTTAGT TCCAATAACT TTAAGATTAC GACGTTTTAG GACATAAATC   3480
GATCATATTT ATGTCCTAAA ACTAGTGAAG CGCCTAGCCA AAGTCCGAAT AGGATTTGGC   3540
GTTAGTTACT TAGATTGCTT TGCAATCAAG TAACTTTGGC GATTTACATC TTCTCTGGCG   3600
CTTCTACTCC AAGCAAGCGA AGGGCTTCTT TGAGAACGAC TGCGGTTGCG TAGCTGAGGG   3660
CTAGACGGCT GTCGCGTTCT GGGCTTTCAT CCAAGATACG TGTATGTGCA TAGTATTTGT   3720
TAAAGGATTG AGCCAGGCTA ATTGCAAATT TAGCAATGAT AGAAGGTTCA AAGTTATCTG   3780
CCGCACGGTT GATAATACGT GGGAAGTCTT GAATGAGTTT AATGATTTCC CAGCTTTCAG   3840
TATCATTCAA GCTATAGTTG CCAGCTGTTT CTGGTTTGAA ATCGGCTTTG CGTAAGATAG   3900
ATTGGATACG AGCGTAGGCA TATTGAACGT AAGGTCCAGT TTCACCCTCG AAGGATACCA   3960
```

803

```
TAGCCTCTAG GTCGAAGTCG TATCCATTTG TACGGTCGGT TTTGAGGTCA TAGAATTTAA      4020

TGGCTCCAAT CCCAACAGCA TGTGCTACTT GGTCTTTGTT TTCTAGTTCA GGATTTTTAG      4080

CCTCGATTTG GACCTTGGCA CGGCTAACAG CCTCTGCAAC AGTAGGCTCT AGCAAGATGA      4140

CATTCCCTTT ACGAGTAGAG AGTTTCTTCC CTTCTTTTGT AACCAAACCA AAAGGAACGT      4200

GAGTAATGTC GTCACTCCAG TCGTAGCCCA TCTCTTGCAA GACAGCTTTG AGCTGTTTAA      4260

AGTGGGCAGA TTGTTCTTGA CCAACGACAT AGATAGATTT AGCAAATTGG TATTCGTTTT      4320

TACGGTAGAG GGCTGCAGCC AAGTCACGTG TGATATAGAG AGTTGCACCA TCAGACTTCT      4380

TGATGAGGGC TGGATGTTCA ATTCCATATT TCTCAAGATT CACAACTTGG GCACCTTCTG      4440

ATTCAAGAAG TAGTCCTTTT TCAGAAAGAA TGTCTACAAC TGCATCCATC TTATCATTGT      4500

AGAAGGCTTC TCCGTTATAG CTGTCAAATT CAACCTTCAA TTCATTGTAA AGGCGGTTAA      4560

ATTCCACTAA ACTTTCATCG CGGAACCATT GCCAAAGAGC GAGAGCTTCC TCATCTCCAT      4620

TTTCAAGTTT ACGGAACCAT TCGCGCGCTT CTTCATCCAA GCTAGGGTCA TTTTCAGCTT      4680

CAGCGTTGAT GCGGACATAG AGTTTAAGGA GTTCATCGAT TGGATGAGCT TTTACAGCTT      4740

CTTCGTCGCC CCATTTTTTG TAGGCAACAA TCAACATCCC AAATTGTTTA CCCCAGTCTC      4800

CCAAATGGTT GACCTTGACC GTTTGATAAC CGATTTTTTG GAAAATATGT GACAAGCTAT      4860

CTCCGATAAC AGTTGAACGC AGGTGGCCAA TAGAAAATGG TTTAGCGATA TTCGGACTAG      4920

ACATGTCGAT AACAACATTT TCTTGTTTAC CAATATTTTG GTCAGCATAG TGTTCTTTTT      4980

CAGTGGTAAC AGCTTGCAAT ACTTGAGCAG AAATGGCAGA TTTATCAAGG AAAAAGTTAA      5040

CGTAAGGTCC TGTTGCGACA ACTTTTTCAA AGGCTTGGCT GTTCATTTTT TCAGCCAGTT      5100

CAGCCGCAAT CATTTGTGGT GCTTTACGTT CGACTTTTGC AAGAGAAAAA GCAGGGAAAG      5160

CAATGTCTCC CATTTCTGAG TTTTTAGGGG TTTCCAGTAA CTTTAAAATA GCCTCTTGGT      5220

CCAGGCTATC AATGATGCTA GATAATTCGC TAGCAATCAA TTCTTTTGTA TTCATTAAGA      5280

GCTCCTTTTT GGACTTTTCT ACTATTTTAT CACAATTTTA AAGAAGAAG AAAAAATTTT      5340

TGAAATCTCC TGTTTTTTTG GTATAATATG GTTATAAATA TAGTTATAAA TATGCACGCA      5400

AGAGGATTTT ATGAGAAAAA GAGATCGTCA TCAGTTAATA AAAAAAATGA TTACTGAGGA      5460

GAAATTAAGT ACACAAAAAG AAATTCAAGA TCGGTTGGAG GCGCACAATG TTTGTGTGAC      5520

GCAGACAACC TTGTCTCGTG ATTTGCGG                                         5548
```

(2) INFORMATION FOR SEQ ID NO: 110:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 3132 base pairs

                                              804
                    (B) TYPE: nucleic acid
                    (C) STRANDEDNESS: double
                    (D) TOPOLOGY: linear

          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

TACCCGGTAG TCTTAGCAGA CACATCTAGC TCTGAAGATG CTTTAAACAT CTCTGATAAA   60

GAAAAAGTAG CAGAAAATAA AGAGAAACAT GAAAATATCC ATAGTGCTAT GGAAACTTCA   120

CAGGATTTTA AAGAGAAGAA AACAGCAGTC ATTAAGGAAA AAGAAGTTGT TAGTAAAAAT   180

CCTGTGATAG ACAATAACAC TAGCAATGAA GAAGCAAAAA TCAAAGAAGA AAATTCCAAT   240

AAATCCCAAG GAGATTATAC GGACTCATTT GTGAATAAAA ACACAGAAAA TCCCAAAAAA   300

GAAGATAAAG TTGTCTATAT TGCTGAATTT AAAGATAAAG AATCTGGAGA AAAAGCAATC   360

AAGGAACTAT CCAGTCTTAA GAATACAAAA GTTTTATATA CTTATGATAG AATTTTTAAC   420

GGTAGTGCCA TAGAAACAAC TCCAGATAAC TTGGACAAAA TTAAACAAAT AGAAGGTATT   480

TCATCGGTTG AAAGGGCACA AAAAGTCCAA CCCATGATGA ATCATGCCAG AAAGGAAATT   540

GGAGTTGAGG AAGCTATTGA TTACCTAAAG TCTATCAATG CTCCGTTTGG GAAAAATTTT   600

GATGGTAGAG GTATGGTCAT TTCAAATATC GATACTGGAA CAGATTATAG ACATAAGGCT   660

ATGAGAATCG ATGATGATGC CAAAGCCTCA ATGAGATTTA AAAAAGAAGA CTTAAAAGGC   720

ACTGATAAAA ATTATTGGTT GAGTGATAAA ATCCCTCATG CGTTCAATTA TTATAATGGT   780

GGCAAAATCA CTGTAGAAAA ATATGATGAT GGAAGGGATT ATTTTGACCC ACATGGGATG   840

CATATTGCAG GGATTCTTGC TGGAAATGAT ACTGAACAAG ACATCAAAAA CTTTAACGGC   900

ATAGATGGAA TTGCACCTAA TGCACAAATT TTCTCTTACA AAATGTATTC TGACGCAGGA   960

TCTGGGTTTG CGGGTGATGA AACAATGTTT CATGCTATTG AAGATTCTAT CAAACACAAC   1020

GTTGATGTTG TTTCGGTATC ATCTGGTTTT ACAGGAACAG GTCTTGTAGG TGAGAAATAT   1080

TGGCAAGCTA TTCGGGCATT AAGAAAAGCA GGCATTCCAA TGGTTGTCGC TACGGGTAAC   1140

TATGCGACTT CTGCTTCAAG TTCTTCATGG GATTTAGTAG CAAATAATCA TCTGAAAATG   1200

ACCGACACTG GAAATGTAAC ACGAACTGCA GCACATGAAG ATGCGATAGC GGTCGCTTCT   1260

GCTAAAAATC AAACAGTTGA GTTTGATAAA GTTAACATAG GTGGAGAAAG TTTTAAAATAC   1320

AGAAATATAG GGGCCTTTTT CGATAAGAGT AAAATCACAA CAAATGAAGA TGGAACAAAA   1380

GCTCCTAGTA AATTAAAATT TGTATATATA GGCAAGGGGC AAGACCAAGA TTTGATAGGT   1440

TTGGATCTTA GGGGCAAAAT TGCAGTAATG GATAGAATTT ATACAAAGGA TTTAAAAAAT   1500

GCTTTTAAAA AAGCTATGGA TAAGGGTGCA CGCGCCATTA TGGTTGTAAA TACTGTAAAT   1560

805·

```
TACTACAATA GAGATAATTG GACAGAGCTT CCAGCTATGG GATATGAAGC GGATGAAGGT    1620

ACTAAAAGTC AAGTGTTTTC AATTTCAGGA GATGATGGTG TAAAGCTATG GAACATGATT    1680

AATCCTGATA AAAAAACTGA AGTCAAAAGA AATAATAAAG AAGATTTTAA AGATAAATTG    1740

GAGCAATACT ATCCAATTGA TATGGAAAGT TTTAATTCCA ACAAACCGAA TGTAGGTGAC    1800

GAAAAAGAGA TTGACTTTAA GTTTGCACCT GACACAGACA AAGAACTCTA TAAAGAAGAT    1860

ATCATCGTTC CAGCAGGATC TACATCTTGG GGGCCAAGAA TAGATTTACT TTTAAAACCC    1920

GATGTTTCAG CACCTGGTAA AAATATTAAA TCCACGCTTA ATGTTATTAA TGGCAAATCA    1980

ACTTATGGCT ATATGTCAGG AACTAGTATG GCGACTCCAA TCGTGGCAGC TTCTACTGTT    2040

TTGATTAGAC CGAAATTAAA GGAAATGCTT GAAAGACCTG TATTGAAAAA TCTTAAGGGA    2100

GATGACAAAA TAGATCTTAC AAGTCTTACA AAAATTGCCC TACAAAATAC TGCGCGACCT    2160

ATGATGGATG CAACTTCTTG GAAAGAAAAA AGTCAATACT TTGCATCACC TAGACAACAG    2220

GGAGCAGGCC TAATTAATGT GGCCAATGCT TTGAGAAATG AAGTTGTAGC AACTTTCAAA    2280

AACACTGATT CTAAAGGTTT GGTAAACTCA TATGGTTCCA TTTCTCTTAA AGAAATAAAA    2340

GGTGATAAAA AATACTTTAC AATCAAGCTT CACAATACAT CAAACAGACC TTTGACTTTT    2400

AAAGTTTCAG CATCAGCGAT AACTACAGAT TCTCTAACTG ACAGATTAAA ACTTGATGAA    2460

ACATATAAAG ATGAAAAATC TCCAGATGGT AAGCAAATTG TTCCAGAAAT TCACCCAGAA    2520

AAAGTCAAAG GAGCAAATAT CACATTTGAG CATGATACTT TCACTATAGG CGCAAATTCT    2580

AGCTTTGATT TGAATGCGGT TATAAATGTT GGAGAGGCCA AAAACAAAAA TAAATTTGTA    2640

GAATCATTTA TTCATTTTGA GTCAGTGGAA GCGATGGAAG CTCTAAACTC CAGCGGGAAG    2700

AAAATAAACT TCCAACCTTC TTTGTCGATG CCTCTAATGG GATTTGCTGG GAATTGGAAC    2760

CACGAACCAA TCCTTGATAA ATGGGCTTGG GAAGAAGGGT CAAGATCAAA AACACTGGGA    2820

GGTTATGATG ATGATGGTAA ACCGAAAATT CCAGGAACCT TAAATAAGGG AATTGGTGGA    2880

GAACATGGTA TAGATAAATT TAATCCAGCA GGAGTTATAC AAAATAGAAA AGATAAAAAT    2940

ACAACATCCC TGGATCAAAA TCCAGAATTA TTTGCTTTCA ATAACGAAGG GATCAACGCT    3000

CCATCATCAA GTGGTTCTAA GATTGCTAAC ATTTATCCTT TAGATTCAAA TGGAAATCCT    3060

CAAGATGCTC AACTTGAAAG AGGATTAACA CCTTCTCCAC TTGTATTAAG AAGTGCAGAA    3120

GAAGGATTGA TT                                                        3132
```

(2) INFORMATION FOR SEQ ID NO: 111:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 14672 base pairs

806

(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

```
CGAGATTTCT TTAAATGAAC TACGTGAAAT CTACCCATCA TCCAGATCTG GATATTCTCT         60

CCTATCTATA AGTAAAGTTT TAGGAGATTT TAATATAAGT TCTCATGCTT TTAAAGCTTC        120

GGTAAGAGAT TTAAAACCGC TCAGTTTCCC ACTCATTTGC TTCTGGGAGA GTTCTCATTT        180

TATTATTCTT GAAAAAATTA GTAAAAACAA GTTTTATATT TTAGATCCTG CAAAAGGCAG        240

GCAGAGAATG TCAATAAGTG AATTTGAAAG GCATTATTCA AATATCATTT TAACATTTAA        300

AAAGTTAGAT AGCTTTATGT CTCGTAAAGA TAATAAGAAG TCGCCTGTTT TAAAGTATTT        360

TTTTAAGTAT AGGAATAAGC TAGGGATTTT ATTTTTTGTA ACAGCATTAT TGTATGTAAT        420

ACAATCATTA GTACCTATAG CTAATAGATA CATAATTGAC ACGAATTTCA AGGACGATTC        480

GTATTCGTCT AGAATGTTAT TTACTATATT ATTTATATTT ACTGTTTCAT TCTCACTAAT        540

GTATTTATTA AGACAGATAT ATGTTGCATC CTTAAAATAT ATAATGGATA AAGAGATTAG        600

CTATGATTTT ATGAAACATT TGATATATTT ACCTTACAGT TTTTATGAAA AACGTACTTT        660

AGGGGATATA CTTTTTAGAG CTAACTCTAT TGTTTATATA AGAGAAATAC TATCAAATAA        720

TTTTATAGCA GCTATACTTG ATTTGTTAAT GATTGTGGTT TATGCTGTGG TTTTATTTAG        780

CTTTTCTAAG TACATGGTAA TCTTTTTAAT ATCACTAAGT CTAGCTCTAT CTATTGTAAT        840

GTATCCAATC ATAAAAATCT CAAAAAAATTT AATTGATAAA AATATAAAAG AAAAGGTTAA        900

TGTTCAAAAT ATTACTTCCG AAGTAATTTC TAAAAATAGT GATATTAAGC TAACTGGAGA        960

AGAGGAATTT TGGATTAACA AATGGGATAA TTTTAATACA AAACAGCTCA TCATAGGTCG       1020

AAAACTTGAT ATACATTTAT CAATTGTTAG TAGTATAACG AATGTTTTAC AAATTATTCT       1080

CCCTGTTTTG ACCCTTATTG TAGGTGTAAA TATAAAAACA TTCGAACAAT TGACGTTAGG       1140

ACAAATTGTA GCAATAAGTA CAGTCTCACC ATACTTTATT TCTCCTATAA TTTCTTTAAG       1200

TGATAACTAT ATACAATTAA TGTTATTAAA GGGATATTTT TTAAGAATAG AGGATGTGTT       1260

TAATACTAAA TCCGAATTAA TTCCAGAAAG AGTCAGTCAA GATATAAAAT TTGATAAAAA       1320

AATAGAATTA AAAGATATTT GGTATAAATA TGGATTATTT GATGATTATG TTTTGAAAGG       1380

AATAAATGTT ACTATTAAAA AAGGAGAAAC TGTTGCTATT GTTGGAGAAT CAGGTTCAGG       1440

TAAGAGTACA TTAGCTAAAA TTTTATTAGG TTTATTAGAA CCTAATATTG GTTCAATAGA       1500

AGTTGATGGA GTAGAAAAAG AAGAAATTGG TCAAACATTG TATAGAAAGA TTTTTGGAGC       1560
```

807

```
AGTGTTACAA AATTCAACCC TAAGTTATGG TACCTTAAGA GAGAATTTGA CATTTGGACA       1620

CTTTGTTTCA GATGAAGAAT TAATGACAAA TCTAAATTCA ATTGGTCTTA GCAATGTAGT       1680

TAAATCTTTA CCTCTTGGAT TAGAGACAAT CATCGCTGAA GAAGGTAATA ACTTTTCTGG       1740

AGGGCAGCAG CAAATGATAC TTTTAGCTCG TTGTCTTTTG TCGAAACCTT CGGTAGTTGT       1800

TTTGGACGAA GCAACAAGTA GTTTAGATAA TTTATCTCAA CAAATTACAA CTTCTTACTT       1860

AAGTGAAATC GGTACCACTA AGATTTTAAT TGCCCATCGA CTAGATACTA TCAAGTCTGC       1920

AGATAAGATC TTAGTAATGC ATAATGGTGA AATTGTAGAG ATTGGGACCC ATAGAGAACT       1980

TCTTGAACTA GGAGGCATTT ATAAGCAATT GTATTCAAAT AATTAGTTTT TGATTAAAAG       2040

GGTAAATTTA TGAAGATTAT GAAAAAAAAA TATTGGACTT TAGCGATATT ATTCTTTTGT       2100

TTGTTCAATA ATTCTGTTAC TGCTCAAGAA ATACCTAAAA ATCTTGATGG CAATATAACT       2160

CACACTCAGA CTAGCGAAAG TTTTTCTGAA TCTGATGAAA AACAGGTTGA CTATTCTAAT       2220

AAAAATCAAG AAGAAGTAGA CCAAAATAAA TTTCGTATTC AAATCGATAA GACAGAATTA       2280

TTTGTAACAA CAGATAAACA TTTAGAAAAA AACTGTTGTA AATTGGAACT TGAACCACAA       2340

ATAAATAACG ATATTGTTAA CTCTGAAAGT AATAATTTAC TAGGCGAAGA TAATTTAGAT       2400

AATAAAATTA AGGAAAATGT TTCTCATCTA GATAATAGAG GAGGAAATAT AGAGCATGAC       2460

AAAGATAACT TAGAATCGTC GATTGTAAGA AAATATGAAT GGGATATAGA TAAAGTTACT       2520

GGTGGAGGCG AAAGTTATAA ATTATATTCT AAAAGTAATT CTAAAGTTTC AATTGCTATT       2580

TTAGATTCAG GAGTCGATTT ACAAAATACT GGATTACTGA AAAATCTTTC AAATCACTCA       2640

AAAAACTATG TCCCCAATAA AGGATATTTA GGAAAAGAGG AGGGAGAGGA AGGAATAATA       2700

TCAGATATTC AAGATAGATT AGGTCATGGT ACGGCTGTTG TAGCTCAAAT TGTAGGGGAT       2760

GACAATATTA ATGGAGTAAA TCCTCACGTT AATATTAACG TCTATAGAAT ATTTGGTAAG       2820

TCGTCAGCTA GTCCAGATTG GATTGTAAAA GCAATTTTTG ATGCTGTAGA TGATGGCAAT       2880

GATATTATCA ATCTTAGTAC TGGACAATAT TTAATGATTG ATGGAGAATA TGAGGACGGA       2940

ACAAATGATT TTGAAACATT TTTGAAGTAT AAAAAGGCTA TTGATTACGC GAATCAAAAA       3000

GGAGTAATTA TAGTAGCTGC ATTAGGGAAT GACTCCCTAA ATGTATCAAA TCAGTCAGAT       3060

TTATTGAAAC TTATTAGTTC ACGCAAAAAA GTAAGAAAAC CAGGATTAGT AGTTGATGTT       3120

CCAAGTTATT TCTCATCTAC AATTTCGGTC GGAGGCATAG ATCGCTTAGG TAATTTATCA       3180

GATTTTAGCA ATAAAGGGGA TTCTGATGCA ATATATGCGC CTGCAGGCTC AACATTATCT       3240

CTTTCAGAAT TAGGACTTAA TAACTTTATT AATGCAGAAA AATATAAAGA AGATTGGATT       3300
```

808

```
TTTTCGGCAA CACTAGGAGG ATATACGTAT CTTTATGGAA ACTCATTTGC TGCTCCTAAA      3360

GTTTCTGGTG CGATTGCAAT GATTATTGAT AAATACAAAT TAAAAGATCA GCCCTATAAT      3420

TATATGTTTG TAAAAAAATT CTGGAAGAAA CATTACCAGT AAAAAATGGT ATAAAAGTGT      3480

TAAATATACC AAACGTATTG AGATATGATT TGAATATGTT ACAATTAGAA TATAAAAATG      3540

AACAAAGTTG GGATAGTTTC ATAGATAATG TTAATTTAAT TGAGTTGGAA GAGAGAATTC      3600

AAACTACTAT TGGAATTAAA CAAATAAACA CACACAATAT TATTACTATT GCCCGAGAAG      3660

GGTACTCTCA AAATTATTTA CCTAACACTT CAGAAAATAC ATATAATTCA TTACAAGTCA      3720

GTTTAGTTGG AGTATTACTA CTTTTTATAA GTATGGTAAA TATTTTATGG GCTAAAAAAA      3780

GTAAATGAAA ATAAAATTTG GAGCCCTCTG AAAAAGTAAG TCCTACAGTT CAACTAAAAT      3840

GAGTCAAAAG ATGAATCACC TTGATGTAGG GGAGTTTGTC TTATTGCTGC CTGAACACCT      3900

CCGTTCAGAG GAAGAACATT ATAAATCTGT TTTTGAAGAC GACTTAACCA GTCGCATATC      3960

TAGTCAAGAT GAACGACAGC AAATGACTGC TACGGTAGGT TATTTAGAAT CAGGTCAGGA      4020

TCGTTTTGTG TATAATACGA CCCCTATTTC TTACCAGCAG TTTTTGAAAG ATCCAATCAT      4080

CATTGTTATA ACACCCCAAT CAACTGGTCC ACAGTCCATT TTGTTTTGGA TAGACGCAGT      4140

ACAGAACTAC GTTCTCTTTA ATCAATTGTC TGATGCCCAG GAGCTTATCC AGAGACAAGG      4200

CATTGAAAAT TGGGTCTCAG AAATGCAAAC AGGTTACCAC AACTACATCA CATTATTGGA      4260

TAATATCCAG AGGGAACGTT GGGTAATGCT AGCAGGAGCT GTGCTTGGGA TTGCAACTTC      4320

AATCTTGTTG TTTAACACTA TGAATAGGCT CTACTTTGAA GAATTTAGAC GTGCCATTTT      4380

TATCAAACGC ATTGCAGGTC TCAGGTTCTT AGAAATCCAT CGCACTTATC TCTTTGCTCA      4440

ACTGGGTGTG TTTTTACTGG GATTTGTTGC GAGTGTATTT CTTCAGGTAG AGATAGGAGT      4500

TGCTTTCTTA GTCTTGTTAC TCTTTACTGG TCTATCTCTT TTACAGTTAC ATGTCCAAAT      4560

GCAGAAAGAA AACAAGATGT CCATGCTTGT TTTGAAGGGA GGTTAATATG ATTGAACTTA      4620

AACAGGTGAG TAAATCTTTT GGAGAACGAG AGTTATTTTC GAATCTTTCA ATGACATTTG      4680

AGGCTGGAAA AGTCTATGCC TTAATTGGTT CAAGTGGTAG CGGAAAAACA ACCTTGATGA      4740

ACATGATTGG GAAATTAGAA CCTTATGATG GGACGATTTT TTACCGAGGT AAAGACTTGG      4800

CCAATTATAA ATCAAGTGAT TTTTTCCGTC ACGAATTGGG CTACCTCTTC CAGAACTTTG      4860

GCTTAATTGA AAACCAAAGT ATTGAAGAAA ACCTTAAGCT AGGTCTCATT GGTCAAAAGT      4920

TGAGTCGGTC GGAACAGCGG TTGAGGCAGA AGCAGGCTTT AGAACAGGTC GGCCTGGTTT      4980

ATCTTGACCT AGATAAGCGC ATCTTTGAGT TATCGGGCGG AGAATCGCAA CGGGTTGCCT      5040

TGGCAAAAAT TATCTTAAAG AATCCACCCT TTATTCTGGC AGATGAGCCA ACAGCTTCAA      5100
```

809

```
TAGACCCAGC AACCTCTCAG TTGATTATGG AGATTTTGCT ATCTCTTCGA GATGATAATA      5160

GGCTAATCAT TATCGCAACA CATAATCCGG CAATTTGGGA GATGGCTGAT GAAGTGTTCA      5220

CGATGGATCA TCTGAAATAA AAATCCTTGT TTTTAATTGC ACGATGAGTT ACTGAAATAT      5280

TATCATGAAT CAAGAATTGG AGTTAATTTA GAATTGTACT TAATTTAGAA TTGTACTTTA      5340

TTAATATTGA GGTAACTTTT TCTTGATAAA GGAAGAAATA ATGGAGAGGA AGTTAGAATG      5400

AAAAAATTCG ACAATTATAT TATTGAGAAG CCTTGCGATT CTAATTCAGA TAAACTGCAA      5460

AAAATCTTAA TAATTGAAAG TTTGGTAGAT GATATTTTGC AATTTTCTCT CAGAATCAAT      5520

AATAGTGTAG GAGAGATTTT CCTCCTACAA CCGTTTTAAA AGAAAACTAT CTTTATTCCA      5580

TGTTATTTTG AGGAAGATAT TGTGAAAGTC AAAGATGATG ATAAAGTTGA GTGGAATTTG      5640

TTAGAATTTC AAAAATTTAG AGCATTTTTG GCTTAGTAAT CTGTGTTGAA GGCTCAAAAC      5700

CTATGGTAAA AAAGTAGCTT TGAAAACGTA TTGCCTCCAA AGATTTAGTT AAATAATGAT      5760

TTAACACAAA AAGAAATTAT TGAAGTTCTG GAAAGATGTT GTTTCAGTAT TGAGAAAAGG      5820

TGGGAAAAAC TTGCGATTTT CACAGAGAAA GGAAGAAAAA GTATAGAAAT ATAGTCAATT      5880

GAAACAAGAA CAGGATAAAA GAACCTTTTG TGCCATATTT TTCTCCTTTC GCTTTACAAT      5940

TGGATTGAAC ACCTTTATTG TATCGCGTTT GGAGTTTTTT TGGTATAACC TTCGACGCAC      6000

ACCCGCATAG CGGGTGTTTT TTTTGTCTCG CACCTAACGG AGCGAGACAA ACTAATAGTC      6060

ACTTAATCAA AAAACGCACC ATATCAAAAA CTAAAAAGTT TGATATCATG CGTCATGTCT      6120

TAAACTAATT GACTATACTT TCTATTCAAA TGAGCTTTTA ACCAATTGAT TGAGCCAATC      6180

CACTCTTAAA ACCAAAGAGC AATTTCTCGC TTAGCTGACT CTTCTGAATC TGAACCATGT      6240

ACAACATTTT GGATAATCTC ATTTTCTCCA GCAGCTTTTG CAAAATCACC TCGAATAGTG      6300

CCTGGTAAAG CTTCTTCTGG ACGAGTTGCA CCCATCATGG TCCGCCAAGT TTCGATTACT      6360

TTGGGACCAG AAATGACACC CACAAGAACT GGACCTGAAG TCATGAATTC ACGAATCGGT      6420

GGGTAAAAAC TCTGACCAAC CAAGTCCTGA TAGTGCTGGT CAATCAACTC TTCTGAAACC      6480

TGTGAACGAA ACTCCAATTT TTCGATTGTA AATCCACGTT GTTCGATGCG CTTTAACACT      6540

TCACCCACTA GCCCTCTTTT TACACCATCT GGTTTGATGA TAAAGAATGT TTGTTCCATA      6600

CCCGTCTCCT TTGTCAGCTT CTTTCTTTTA TTTTACCACA TTTCGTGGAA AAATGGAGAA      6660

AGTTTTCAGA AGAGAGAATG AGAGAACCCT CGGGTTCTCT CATTCTCTCT TATTCTACTG      6720

TTTCTTCCAC AGTTTCAACG GCAGTATCCA CAACTACTTC TGTTGTTTCT TCATTTCCTT      6780

CTTCCTCTAC TGGAGGATTA AGGTATTCTT CTTCGTTGAC AGCATGTGGT TCAAGGTTAC      6840
```

810

```
GGTAACGGGC CATACCAGTA CCAGCTGGGA TGATCTTACC GATGATAACA TTTTCTTTAA    6900

GTCCAAGGAG ATGGTCTTTC TTACCACGGA TAGCTGCGTC AGTAAGGACA CGAGTTGTTT    6960

CCTGGAAGGA AGCCGCTGAC AAGAAACTGT TTGTTTCAAG TGAGGCTTTG GTAATTCCCA    7020

TAAGGACTGG GCGACCTGTC GCTGGAACTC CACCTGCGAT AAGGACATCT TTGTTGGCAT    7080

CTGTAAAGTC ATTGATATCC ATGAGGGTAC CCATGAGAAG ATCTGTATCA CCTGGATCCA    7140

TGACACGGAC TTTACGGATC ATTTGACGAA CCATTACCTC GATGTGTTTG TCACCGATTT    7200

CTACCCCTTG GCTACGGTAA ACTTTTTGTA CTTCACCGAG AAGGTACGTT TCAACTGACA    7260

AGACATCACG AACTGCAAGG AGACGTTTTG GTTGGATAGA ACCTTCTGTC AGAGCAGCAC    7320

CACGCGCTAC TTGGCCCCCA ACTTCGACAC GCATACGAGC TGTAAATGGA ACGACATATT    7380

CACCTTCGCC AGTTTCACCC TTAACAAAGA CTTTCTTGGT ACGAGTTGAT GCATCTTCTT    7440

CGATAGCAGT AACTTGTCCT TTAACCTCTG TAATAACCGC TTCCCCTTTA GGATTGCGGG    7500

CTTCAAAGAT TTCTTGGACA CGAGGAAGAC CCTGAGTGAT ATCGGTATTT GAGGCAACCC    7560

CACCTGTGTG GAAGGTACGC ATTGTAAGCT GTGTACCAGG TTCCCCGATA GATTGGGCAG    7620

CGATTGTACC AACTGCTTCA CCAACTTCAA CCGCATCACC AGTCGCCAAG TTGATACCGT    7680

AACAGTGACG GCAGACACCG TGACGAGTGT TACATGTAAA TACAGAACGG ATAGTCACTT    7740

CTTCCACACC AGCATTGACA ATTTCACGCG CCTTGTCTTC TGTAATCAAT TCATTTGGAC    7800

CAATAATCAC TGCACCAGTT TCTGGATGTT TAACAGTTTT CTTAGTGTAA CGACCCTTCA    7860

GACGCTCTTC GAGAGACTCG ATCATCTCTT TTCCTTCTGC GATAGAACGG ATCAAGAGAC    7920

CACGGTCAGT TCCACAGTCG TCCTCACGGA TGATAACGTC TTGGGCAACG TCGACCAAAC    7980

GACGAGTCAA GTAACCTGAG TCGGCTGTCT TAAGGGCCGT ATCGGTCATA CCTTTACGAG    8040

CACCGTGAGT TGAGAAGAAC ATTTCCAATA CCGACAAACC TTCGCGGAAG TTTGAAAGGA    8100

TTGGCAATTC CATGATACGT CCATTCGGAG CAGCCATCAG ACCACGCATA CCGGCAAGCT    8160

GTGAGAAGTT TGAGATGTTA CCACGGGCTC CAGAGTCCAT CATCATAACG ATTGGGTTCT    8220

TAGGATCTTG GTTAGCAATC AAGCGTTTCT CAAGTTTTTC ACGGGCAGCA CGCCATTCAG    8280

CTGTAACAGC ATTGTAACGC TCGTCGTCTG TGATCATACC ACGACGGAAT TGTTTGGTGA    8340

TTTGTTCGAC ACGTTTGTGT GATTCTTCAA TGATTTCAGC CTTGTCATCA ACGACTGGGA    8400

TATCGGCAAT ACCCACTGTC AATCCTGCAA GAGTTGAGTG GTGGTAACCG AGGTTCTTCA    8460

TGCGGTCAAG TAGGGCAGAA GTTTCTGTCG TACGGAAACG TTTGAAGATT TCAGCGATGA    8520

TATTTCCAAG GTTTTTCTTC TTGAATGGAG GGTTGAGCTC AAGATTGCTG ATAGCTTCCT    8580

TGATATCTCC ACCAAGTGGC AAGAAGTATT TAGCTGGAAC ACCTTCTGTC AAGTTGGCAT    8640
```

811

```
TGTTTGGTTC TTGCAAGTAT GGTAGCCCCT CTGGCATGAT ATCGTTGAAG AGAATTTTAC    8700

CAACTGTTGT AAGCAAGACC TTATGTCTTT GCTCTTCTGT CCAAGGCTTG TTGAGGCTGT    8760

CTGTTGCGAT ACCAACACGT GAGTGGAGGT GAACATAACC ATTGCGGTAA GCCATAACCG    8820

CTTCGTCACG GTCTTTGAAG ACCATTCCTT CACCTTCGCG ACCAGCTTCT TCCATGGTCA    8880

AGTAGTAGTT ACCCAAAACC ATGTCCTGAG ATGGAGTAAC TACCGGTTTC CCATCTTTCG    8940

GGTTCAAGAT GTGCTCAGCA GCTAGCATGA GGATACGAGC TTCTGCTTGT GCTTCTTCTG    9000

AAAGTGGTAC GTGGATGGCC ATTTGGTCCC CGTCAAAGTC AGCATTGTAG GCTTCACAGA    9060

CAAGTGGGTG CAAGCGAAGA GCCTTACCAT CAATCAAGAC TGGCTCGAAG GCTTGGATAC    9120

CCAAACGGTG AAGGGTCGGT GCGCGGTTCA AAAGCACTGG GTGTTCTTTA ATCACTTCTT    9180

CAAGGATATC CCAGATACGC TCATCTCCGC GTTCCACCAA GCGTTTAGCT GCTTTGACGT    9240

TTTGCACGAT ATCACGGGCA ACGATTTCAC GCATGACAAA TGGTTTAAAG AGTTCAATCG    9300

CCATTTCACG CGGCACACCA CATTGGTACA TCTTAAGAGT TGGACCAACG GCGATAACTG    9360

AACGTCCTGA GAAGTCAACA CGTTTACCGA GCAAGTTTTG ACGGAAGCGT CCTTGTTTAC    9420

CTTTAAGCAT GTGGCTCAAT GATTTCAATG GACGGCTACC TGGTCCTGTG ATTGGACGAC    9480

CACGACGACC ATTGTCAATC AAAGCGTCAA CTGCTTCTTG AAGCATACGC TTCTCATTTT    9540

GAACGATGAT ACCTGGTGCA TTTAACTCAA GCAAACGAGC CAAACGGTTG TTACGGTTGA    9600

TAACACGGCG GTAAAGGTCA TTCAAGTCAG ATGAGGCAAA ACGGCCACCA TCCAACTGCA    9660

ACATTGGACG AAGATCTGGT GGGATAACCG GAAGGATGTT AAGAATCATC CATTCAGGTT    9720

TGTTTCCAGA CTTGTAAAAG GCATCCAAAA CATCCAAACG ACGGATGGCT TTGACACGCT    9780

TTTGTCCAGT AGCTGTTTTC AATTCTTCTT TGAGTTCAGC AATTTCTTTT TCAAGATCTA    9840

CTTGCTTCAA AAGGTCTTGG ATGGCTTCCG CACCCATCTT GGCAACAAAT GAACCATAAC    9900

CATATTCACG CAAGCGCTCT CGGTATTCGC GCTCTGTCAT GATAGACTTG TGCTCAAGTG    9960

GTGTATCCTT AGGATCAATC ACCACATAAG CCGCAAAGTA GATAACTTCC TCGAGGGCAC    10020

GAGGGCTCAT ATCAAGGGTC AAGCCCATAC GGCTTGGAAT CCCCTTGAAG TACCAGATGT    10080

GAGATACAGG AGCTTTCAAT TCGATATGTC CCATACGCTC ACGACGAACT TTCGTACGCG    10140

TTACTTCAAC CCCACAGCGG TCACAAACAA TTCCTCTGTA ACGAATGCGT TTGTACTTAC    10200

CACAAGCACA TTCCCAGTCT TTTGTAGGAC CAAAGATCAC TTCATCAAAG AGTCCTTCAC    10260

GTTCTGGTTT CAAGGTACGA TAATTGATTG TTTCAGGTTT TTTGACTTCT CCATAAGACC    10320

ATGAACGGAC TTTACTTGGA GAAGCTAGGG TGATTTGCAT ACTTTTAAAA CGATTTACAT    10380
```

812

```
CAACCACTAT TTCTTCCCTT TCTATTCTAA GTGAACTGCT TATTCTTGTT CAGCAGCTTC   10440

TTCTGTTGCT TCCGCTTTTG TTGCTTTCTC AGCTTCTTCA GCTTCAAAGG CTGCTTTAGC   10500

CTCTTGGGCT GCTTTTTCGC GGGCTTTTTC AAGGTCATCT ACGTGGATGA CATCTTCGTC   10560

CATTCCTTCA TCCAAGTCGC GAAGTTCCAC TTCTTGGTCA TCTTCGTCTA GGACACGCAT   10620

GTCAAGACCA AGAGATTGCA ATTCTTTGAC AAGAACTCGG AAGGATTCTG GAACACCTGG   10680

TTTTGGAATT GGTTTGCCTT TTGTAATAGC TTCATAGGCT TTCAAACGTC CGTTGATATC   10740

GTCCGACTTG TAAGTCAAGA TTTCTTGAAG GACATTTGAC GCACCGTAGG CTTCAAGAGC   10800

CCAAACCTCC ATCTCACCGA AACGTTGTCC ACCAAACTGA GCCTTACCTC CGAGTGGTTG   10860

TTGGGTAACA GTTGAGTATG GTCCGACTGA ACGCGCGTGC AATTTATCAT CAACCATGTG   10920

GTGGAGTTTG ATCATGTACA TGACTCCGAC AGAAACACGG TTATCAAACG GTTCACCAGT   10980

ACGTCCATCG TAAAGGATCG TTTTGGCATC GCTATCCATA CCTGCTTCTT TAACAGTTGA   11040

CCAAAGATCT TCAGAACTTG CTCCATCAAA GACTGGTGTA GCGATGTGAA TACCAAGAGT   11100

ACGAGCTGCC ATACCAAGGT GAAGCTCCAT AACCTGACCG ATATTCATAC GTGATGGTAC   11160

CCCAAGTGGG TTCAACATGA TGTCGACTGG AGTTCCGTCT GGAAGGTAAG GCATGTCTTC   11220

TACAGGAACA ATACGAGAGA CAACCCCTTT GTTTCCGTGA CGTCCGGCCA TTTTATCTCC   11280

GACCTTAATC TTACGTTTTT GAGCGATGTA AACACGAACC AACATGTTAA CACCTGATTG   11340

CAACTCATCT CCATTTACAC GTGTAAAGAT CTTAACATCA CGAACGACAC CATCGGCACC   11400

GTGTGGTACA CGAAGAGAAG TATCACGCAC TTCACGAGAC TTGTCTCCAA AGATAGCGTG   11460

CAAGAGACGT TCTTCAGCTG AAAGATCTTT CTCACCCTTA GGTGTTACTT TACCTACAAG   11520

AATATCACCT TCTTTAACCT CAGCACCAAT ACGGATAATC CCCATTTCGT CAAGGTCTTT   11580

GAGGGCATCT TCACCAACGT TTGGAATTTC GCGAGTGATT TCTTCAGGCC CAAGCTTTGT   11640

ATCGCGCGTT TCTGATTCGT ATTCTTCAAG GTGAACAGAT GTGTAGACAT CGTCCTTCAC   11700

CAAGCGTTCG CTCATGATAA CGGCATCCTC GAAGTTGTAA CCTTCCCAAG TCATGTAGGC   11760

AACGATTGGG TTTTGTCCAA GCGCCATTTC TCCATTTTCC ATAGAAGGTC CGTCAGCGAT   11820

GAAATCGCCT TTTTCAACGA CATCACCAAC TTTTACGAGA GTGCGTTGGT TGTAAGCAGT   11880

ACCTGAGTTT GAACGACGGA ATTTTTGGAT GTGGTAAACA TCCAATGAAC CATCTTCACG   11940

ACGAACTTCT ACCTTGTCAG CATCTGCGTA AGTAACTTTA CCATCATACT GAGCAATCAC   12000

AGCCGCACCA GAATCGTGGG CTGCTTGGTA TTCCATACCA GTACCAACGT AAGGTGCCTG   12060

AGGATTAATC AATGGCACAG CCTGACGTTG CATATTGGCT CCCATGAGGG CACGGTTGGA   12120

GTCATCGTTT TCCAAGAAAG GAATACATGC TGTCGCAACG GCAACTACCT GTTTTGGTGA   12180
```

813

```
AACGTCCATG TAGTCAACAA TATTAGCTGG ATACTCTTGG TTGACCCCTT GGTGACGTCC   12240

CATGACAATC TTCTCAGCAA AGGTTCCATC TTCATTCAGA CGAGAGTTAG CCTGAGCTAC   12300

AGTATATTCA TCTTCTTCAT CAGCTGTCAA CCAAACAATT TCGTTCGTGA CAACACCTGT   12360

TTCACGGTCA ACCTTACGGT ATGGTGTTTG AACAAAACCA TATTTGTTCA AGTGTCCATA   12420

AGATGACAAG TTATTGATCA AACCGATGTT AGGTCCTTCA GGTGTCTCGA TTGGACACAT   12480

ACGACCATAG TGAGTGTAGT GCACGTCACG TACTTCATAT CCAGCACGGT CACGAGTCAA   12540

ACCACCAGGT CCTAAGGCTG ACAAACGGCG TTTGTGAGAC AACTCAGAAA GCGGGTTGTG   12600

TTGGTCCATG AACTGTGACA ACTGTGATGA ACCAAAGAAT TCTTTAACTG CAGCTGTTAC   12660

AGGACGGATA TTGATAATTT GTTGTGGTGT CAAGACTTCA TTGTCCTGAA CAGACATACG   12720

TTCACGGACA TTACGTTCCA TACGAGAAAG TCCCAAACGT ACTTGGTTGG CAAGCAATTC   12780

ACCAACCGCA CGGATACGAC GATTTCCAAG GTGGTCGATA TCATCTACAC GGCCAAGTCC   12840

TTCAGCCAAG TTGAGGAAGT AGCTCATCTC AGCAAGGATA TCTGCAGGAG TCACCGTACG   12900

AACCTTGTCA TCTGGGTTAG CATTACCAAT GATCGTTACG ACGCGATCTG GATCAGTTGG   12960

AGCAATAACC TTGAATTTTT GAAGAACAAC AGGCTCAGTC ACAACGGCTG CATCGTTTGG   13020

GATGTAGACA ATCTTGTTCA AGTCGCCATC CAAATGGCTT TCAATGCTTT CAATCACGCT   13080

ACGAGTCATA ATCGTACCAG CTTCTACCAA GATTTCTCCA GTTTCAGGGT CTACCAATGG   13140

CTCTGCAATG GTTTGGTTGA GCAAACGTGT TTTAACATTG AGTTTTTTAT TGATTTTGTA   13200

ACGACCAACT GCTGCCAAGT CATAACGACG TGGGTCAAAG AAGCGAGCTA CAAGCAAGCT   13260

ACGTGAGCTT TCAGCCGTCT TAGGCTCACC TGGACGAAGG CGTTCGTAAA TTTCTTTCAA   13320

GGCTTCGTCT GTACGAGAGT CCATTGGATT CTTGTGGATA TCTTTTTCAA CAGTGTTGCG   13380

AACCAATTCG CTGTCACCAA AGATATCAAA GATTTCATCA TCACCTGAGA AACCAAGAGC   13440

ACGAACCAAG GTTGTAAATG GAATCTTACG AGTACGGTCG ATACGAGTGT AGGTGATATC   13500

TTTTGAGTCG CTTTCAAGTT CCAACCAAGC TCCACGGTTA GGGATAACAG TTGAACCATA   13560

GCCCACCTTA CCATTTTTGT CTACTTTGTC GTTAAAGTAA ACACCTGGTG AGCGGACCAA   13620

CTGAGAAACG ATAATACGTT CACCACCATT GATGATGAAA GTACCCATTT CTGTCATGAT   13680

TGGGAAATCA CCAAAGAAAA CTTCTTGGGT CTTGATTTCG CTTGTTTCTT TATTGATCAA   13740

ACGGAAGGTT ACAAAAATTG GTGCTGAGTA GCTAGCATCG TGGATACGAG CTTCTTCTAG   13800

CGTATATTTT GGTTCCTTGA TTTCATATCC AACAAATTCC AACTCCATTG TGTCTGTGAA   13860

GTTTGAAATT GGCAATACAT CTTCAAACAC TTCCTTAAGA CCGTGGTCTA GGAAAGCTTT   13920
```

814

GAATGAGTCA GTTTGAATTT CAATCAAATT TGGTAAGTCA AGAACTTCTT TGATTCTTGA   13980

AAAACTACGA CGGGTACGAT GTTTCCCGTA TTGAACGTCA TGTCCTGCCA AGATGATTCT   14040

CCTTTGTAAA TAAGTTCCAA GCCTTGTCAA TCAGGCTTTT CTAATCGTCA TATGGTTGTA   14100

AACCCCTTAT CACCGTGTCC TCTTGACGAA TTTTCAGAAT CTTTAAGCCT CTGTTACAAA   14160

TGCTCAAAAT CTTGAAAAAA AGCACAAAAA GAGCAGCTAA ATCTGACTTT TTCAGAAGAT   14220

TTAACTGCTG TGAGCCTTGT CTGGACAATA TTTCAGACAA AACCTACGAC AAATGATTAC   14280

CCATATTATA CCCTATTTAG CTAGATTTTT CAAGGGGTTT CAGTAGGTTT TTGGTAAATT   14340

TTTTCCCATA GAAAACTTGG CATCACATTC GAATCACGCT ATGGTACAAA AAACTGAAAA   14400

AACTATTGAC TGAAAATCAT TTTCAAGGTA TAATAATAAA CGTTAAGGCG GTATAGCCAA   14460

GTGGTAAGGC ACGGCTCTGC AAAAGCTTGA TCGTCGGTTC AAATCCGTCT ACCGCCTTCT   14520

ATAACTTGAT TTATCAGGTT TCAAATGAAC AGAAAGCCCA ATTTGAAGGG CTTTTTTTAT   14580

TTTCCCTCGA ATAAATACGT ATAACTTTAA AAACTTTTGG AGCGAGTTTG TGGCAGAGTT   14640

CTTTCCATGG CATAATTCCC TTTTGAAATC AG   14672

(2) INFORMATION FOR SEQ ID NO: 112:

          (i) SEQUENCE CHARACTERISTICS:
               (A) LENGTH: 7902 base pairs
               (B) TYPE: nucleic acid
               (C) STRANDEDNESS: double
               (D) TOPOLOGY: linear

          (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

AGGAGACTAT TCAAGCCCAA ATTgAGTAGC CCAGCAAAGA CTGTATAGAC TGTGATACGT   60

TTTTCATAGC CATTGGTAAA GAGAATTTGG GAACCAAGAA TGGTATCTAA GGCCAGGATA   120

ATCGTACGAA AAGCGAAGAG AGAGGTCAAG ATGCCGCCTC CGATATATTT TTCACTACCG   180

TAAAGTAGGA TGGCATTTGG TCCTAAAACC ATGAGTCCAA AACTCAGTGG AATGATAAAG   240

AAGTTAAAGA TTCGACTACC TCTATTAACC AGAGAAACAT AGGCTTCTTT GTCTCCTTTC   300

CCCAGATAGT AACTGAGACG AGGCACACTC ACTCCAATTG CACCTGTTAC AACCCCAGCT   360

ATAACGGTCA CAATTCGCTG AGCTATGGTA TAGTAACTAA CGTTGACATC AATCCCTGTT   420

TTAACGAGGA AGAGGCGATC TAAAAAAGTG AAGAGCATAT TGGCATTGGC AAAGACTAAC   480

ATGGCTGTCA GAGGGAGAAA GAGTGGTTTA AAATCACTTA GGTGAATTTT AACAAGTTTG   540

ATGTCTCTTT TAATCCAAAA ATAACTAATC AGGTAGTTAA TCAGCGTCGA TAAACTCATC   600

ACAAGTGTAT AGACAACAAT ATCGTGTTCA TTTTTAACAA ATAAGAAAAT AGAGACCAGC   660

815

```
ATCAGGATAC GGATGAAGGC AGTTTTGTAA AAGAGAAAAC TGTAATTTTC CAGAGCTTCA        720

TTGACCCATT CGATTGAAAA AATCTGGGCA ATGAGTTGAA TCCCCATAAC AAGGTAGACC        780

TTTTTGACGA TTGGATTATC AGTAAAGAAG AGAGGATAGG CTAGGATATA GACAGCAGTG        840

GTCAAAATCG TACAAGCGAT GCACAAATAA AAAAGACTAG AAAAGGTTCT GTTAAGATCT        900

TTTTTGTTAT CCTTGACATT ACTGATAGCC CTTAAACCGT AGTTATAGAC ACCATAAGTT        960

GCAAAGGGCA AGAAAAATGA CAAAATAGTG TCGACTGAGT TGAAGTAACC ATAGTCAGTT       1020

CGGTCCAAGA CACGCGCGAC ATAGGTTCCA GTTAGGATGG GAAAAATAAT ATTCAAGACA       1080

CGAATTCCCA TGTAAGATAG AGCATTTAAT TTTATACTTT TCATTCAATT TACCTCGTTT       1140

TTCATTATAT CATAAAGTTA GCTAATAAGA AATGAAGGGC AGTAAGTCAA GTAATCACTT       1200

TGAAGTTTCA AATCTTAAGT TTTAAGTTTT CTTTAAGGAA AGTATATTAT TCTGAAGGAC       1260

TCTAAAATTT CGCAGCCATT TATTAGTAAT TGCTACAGAA TTCCTAGTCA TTACTAGAAA       1320

TGGACTAGTT TCTTTGAATA ATAGAACTGC ATAATTCTCC TATTCTAGAA GGGGAGGACC       1380

AGTATTTCTT TTATGATAGG ACTAGATTGT GGTATAATAG AGAGAATAAG TTTTTTTAGT       1440

AAGACAAAGG AGAAAATAGA TGATTTATGC AGGAATTCTT GCCGGTGGAA CTGGCACACG       1500

CATGGGGATC AGTAACTTGC CAAAACAATT TTTAGAGCTA GGTGATCGAC CTATTTTGAT       1560

TCATACAATT GAAAAATTTG TCTTGGAGCC AAGTATTGAA AAAATTGTAG TTGGTGTTCA       1620

TGGAGACTGG GTTTCTCATG CAGAAGATCT TGTAGATAAA TATCTTCCTC TTTATAAGGA       1680

ACGTATCATC ATTACAAAGG GTGGTGCTGA CCGCAATACA AGTATTAAGA ACATCATTGA       1740

AGCCATTGAT GCTTATCGTC CGCTTACTCC AGAGGATATC GTTGTTACCC ACGATTCTGT       1800

TCGTCCATTT ATTACACTTC GCATGATTCA GGACAATATC CAACTTGCCC AAAATCATGA       1860

CGCAGTGGAC ACAGTGGTAG AAGCGGTTGA TACTATCGTT GAAAGTACCA ATGGTCAATT       1920

TATTACAGAT ATTCCAAATC GTGCTCACCT TTATCAAGGA CAAACACCTC AAACATTCCG       1980

TTGCAAGGAC TTCATGGACC TTTATGGATC TCTTTCTGAT GAAGAGAAGG AAATCTTGAC       2040

AGATGCATGT AAAATCTTTG TGATCAAAGG AAAAGATGTG GCTTTGGCCA AAGGTGAATA       2100

CTCAAATCTG AAGATTACAA CCGTAACAGA TTTGAAGATT GCAAAAAGTA TGATTGAGAA       2160

AGACTAGTAA AATGATTAAT CAAATTTATC AACTAACTAA GCCTAAGTTT ATCAATGTCA       2220

AATATCAGGA AGAGGCTATT GACCAAGAGA ATCATATCCT TATCCGTCCC AACTACATGG       2280

CTGTCTGTCA TGCGGATCAG CGTTACTATC AGGGAAAACG TGATCCCAAG ATTTTGAATA       2340

AAAAGCTTCC AATGGCAATG ATTCACGAGT CATGTGGAAC CGTCATTTCT GACCCGACCG       2400
```

816

```
GAACCTACGA GGTTGGTCAA AAAGTTGTCA TGATTCCCAA TCAGTCTCCT ATGCAGAGTG    2460

ATGAAGAATT CTATGAAAAC TACATGACAG GGACCCATTT CTTGTCTAGT GGATTTGATG    2520

GCTTTATGAG AGAGTTTGTT TCTCTCCCTA AAGATCGTGT GGTGGCTTAT GATGCTATTG    2580

AAGATACGGT TGCAGCCATT ACAGAGTTTG TCAGTGTGGG CATGCACGCT ATGAATCGTC    2640

TATTGACTCT TGCTCATAGC AAGCGGGAGC GGATCGCCGT TATTGGAGAT GGAAGTTTAG    2700

CTTTTGTGGT TGCCAATATT ATCAACTATA CTTTGCCAGA AGCAGAGATT GTGGTTATTG    2760

GTCGTCATTG GGAAAAGTTG GAACTCTTCT CATTTGCCAA AGAATGCTAT ATTACGGATA    2820

ATATTCCTGA AGATTTGGCC TTTGACCATG CTTTTGAATG TTGTGGTGGT GATGGTACTG    2880

GACCAGCTAT TAATGACTTG ATTCGCTACA TTCGTCCTCA GGGAACGATT CTCATGATGG    2940

GAGTTAGCGA ATATAAAGTC AATCTCAATA CTCGCGATGC CTTAGAAAAG GGCTTGATTT    3000

TGGTTGGGTC ATCTCGTTCT GGTCGCATTG ATTTTGAAAA TGCTATCCAA ATGATGGAAG    3060

TCAAGAAATT TGCCAATCGT CTTAAAAATA TCCTTTATCT AGAAGAACCT GTAAGAGAAA    3120

TTAAAGATAT TCATCGTGTC TTTGCAACCG ATTTAAACAC AGCCTTTAAA ACAGTGTTTA    3180

AGTGGGAAGT ATAAGTACTG GAGGTTAATT GTGGAGAAAA TCATTAAAGA AAAAATTTCT    3240

TCCTTACTTA GTCAAGAAGA GGAAGTCCTC AGTGTTGAAC AACTGGGTGG AATGACCAAT    3300

CAAAACTATT TGGCCAAAAC AACAAATAAG CAATACATTG TTAAATTCTT TGGTAAAGGG    3360

ACAGAAAAGC TTATCAATCG ACAAGATGAA AAGTACAATC TTGAACTACT AAAGGATTTA    3420

GGCTTAGATG TAAAAAATTA TCTTTTTGAT ATTGAAGCTG GTATCAAAGT AAATGAGTAT    3480

ATCGAATCTG CGATTACGCT TGATTCAACG TCAATCAAGA CCAAGTTCGA CAAAATTACT    3540

CCAATATTAC AAACTATTCA TACGTCTGCT AAGGAATTAA GAGGAGAATT TGCTCCTTTT    3600

GAAGAAATCA AAAAATACGA ATCCTTGATT GAAGAACAAA TTCCTTATGC CAACTATGAA    3660

TCTGTTAGAA ATGCAGTCTT CTCCTTAGAG AAAAGACTGG CTGACTTAGG TGTTGACAGA    3720

AAATCTTGTC ATATCGATTT GGTGCCTGAA AACTTTATCG AATCACCTCA AGGACGACTT    3780

TATTTGATTG ACTGGGAATA TTCATCAATG AATGATCCAA TGTGGGATTT GGCTGCCCTC    3840

TTTTTTAGAGT CTGAATTCAC TTCCCAAGAG GAAGAAACTT TCTTATCTCA CTATGAGAGT    3900

GACCAAACAC CGGTTTCTCA TGAAAAGATT GCTATTTATA AAATTTTACA AGATACTATT    3960

TGGAGTCTAT GGACTGTCTA TAAGGAAGAG CAAGGTGAAG ATTTTGGTGA CTATGGTGTG    4020

AATCGTTACC AAAGAGCTAT TAAAGGTTTG GCTTCTTATG GAGGTTCAGA TGAAAAGTAA    4080

AAACGGAGTT CCTTTTGGCC TTCTCTCAGG TATTTTCTGG GGCTTGGGTC TAACGGTTAG    4140

TGCTTATATC TTTTCGATTT TTACAGATTT GTCACCCTTT GTGGTGGCTG CAACTCATGA    4200
```

817

```
TTTTTTGAGC ATCTTTATCT TACTAGCTTT TCTCTTGGTA AAAGAAGGGA AAGTTCGCCT      4260

CTCAATTTTC TTAAATATTC GCAATGTCAG TGTTATCATC GGAGCCTTGC TAGCAGGCCC      4320

TATCGGTATG CAGGCCAATC TTTATGCAGT TAAGTATATC GGAAGTTCTT TAGCTTCATC      4380

TGTATCGGCT ATTTACCCTG CGATTTCAGT TCTATTGGCT TTCTTCTTTT TGAAGCACAA      4440

GATTTCGAAA AATACTGTAT TTGGGATTGT CTTGATTATT GGAGGGATTA TTGCTCAGAC      4500

CTATAAGGTT GAACAGGTTA ATTCTTTCTA CATTGGGATT CTTTGTGCTT TGGTTTGTGC      4560

TATTGCATGG GGAAGTGAGA GTGTTCTTAG CTCTTTTGCC ATGGAAAGTG AATTGAGTGA      4620

AATCGAAGCC CTCTTAATCC GTCAAGTAAC TTCGTTCTTG TCCTATCTTG TGATTGTGCT      4680

CTTCTCTCAT CAGTCATTTA CTGCAGTAGC CAATGGACAA TTGCTAGGTC TCATGATTGT      4740

TTTTGCAGCC TTTGATATGA TTTCCTACTT GGCTTATTAT ATCGCTATCA ATCGCTTGCA      4800

ACCAGCCAAG GCTACAGGCT TGAACGTGAG CTATGTAGTA TGGACGGTCT TGTTTGCAGT      4860

TGTTTTCTTG GGTGCACCGC TAGATATGCT GACCATTATG ACGTCACTTG TCGTCATTGC      4920

TGGAGTTTAT ATTATTATTA AAGAATAAAG GAGATTCGTG TGAAAGCCAT TATCTTAGCA      4980

GCGGGATTGG GAACTCGCTT GCGTCCTATG ACTGAAAATA CCCCTAAAGC CTTGGTTCAG      5040

GTTAATCAAA AACCTTTGAT TGAGTACCAA ATTGAGTTTC TCAAAGAAAA AGGAATCAAT      5100

GACATCATCA TCATTGTTGG TTATCTTAAA GAACAATTCG ATTACTTGAA AGAGAAATAC      5160

GGTGTTCGTC TCGTTTTCAA TGATAAATAC GCTGACTACA ATAACTTTTA CTCTCTCTAT      5220

CTTGTAAAAG AAGAATTGGC CAACAGCTAT GTTATTGATG CTGACAATTA TCTCTTTAAA      5280

AATATGTTCC GCAATGATTT GACACGTTCG ACTTATTTTA GTGTTTATCG TGAAGATTGT      5340

ACCAACGAAT GGTTCTTGGT TTATGGAGAT GACTACAAGG TTCAAGACAT TATTGTTGAT      5400

AGCAAGGCAG GTCGCATCCT TAGTGGTGTA TCCTTCTGGG ATGCTCCAAC TGCAGAAAAG      5460

ATTGTCAGCT TTATCGACAA GGCTTATGTA AGTGGTGAAT TTGTTGATCT CTATTGGGAC      5520

AATATGGTTA AGGATAATAT CAAAGAGCTA GATGTCTATG TTGAAGAATT AGAAGGCAAT      5580

AGCATTTATG AGATCGATAG TGTCCAAGAC TATCGTAAAT TAGAAGAAAT TCTTAAAAAC      5640

GAAAATTAAA GATTCCAACA TCTGACAAAA TAGTCGGATG TTTTTTGATT TTTTACGAAC      5700

TTTTACGAAT AGATAGATGA GTAGAAAAAG AAATGGAGTT ATTTATGAAA ATCACAAACT      5760

ATGAAATCTA TAAGTTAAAA AAATCAGGTT TGACCAATCA ACAGATTTTG AAAGTGCTAG      5820

AATACGGTGA AAATGTTGAT CAGGAGCTTT TGTTGGGTGA TATTGCAGAT ATCTCAGGTT      5880

GCCGTAATCC AGCCGTTTTT ATGGAACGTT ATTTTCAGAT AGACGATGCG CATTTGTCGA      5940
```

818

```
AAGAGTTTCA AAAATTTCCA TCTTTCTCTA TTTTAGATGA CTGTTATCCT TGGGATTTGA        6000

GTGAAATATA TGATGCGCCT GTACTTTTAT TTTACAAGGG AAATCTTGAC CTCCTGAAAT        6060

TCCCGAAGGT AGCGGTCGTG GGCAGTCGTG CTTGTAGCAA ACAGGGAGCT AAGTCAGTTG        6120

AAAAAGTCAT TCAAGGCTTG GAAAATGAAC TGGTTATTGT CAGTGGTCTG GCCAAGGGCA        6180

TTGACACAGC AGCTCATATG GCAGCTCTTC AGAATGGCGG AAAAACCATT GCAGTGATTG        6240

GAACAGGACT GGATGTGTTT TATCCTAAAG CCAATAAACG CTTGCAAGAC TACATCGGCA        6300

ATGACCATCT GGTTCTAAGT GAATATGGAC CTGGTGAACA ACCTCTGAAA TTTCATTTTC        6360

CTGCCCGTAA TCGCATCATT GCTGGACTTT GTCGTGGTGT GATTGTAGCA GAGGCTAAGA        6420

TGCGTTCAGG TAGTCTCATT ACGTGTGAGC GAGCAATGGA AGAAGGACGC GATGTCTTTG        6480

CTATTCCTGG TAGCATTTTA GATGGACTAT CAGACGGTTG CCATCATTTG ATTCAAGAAG        6540

GAGCAAAATT GGTCACCAGT GGGCAAGATG TTCTTGCGGA ATTTGAATTT TAAAAATGAC        6600

CTAAGCTAGA ATTCTAAGAA AAAATCAATT TTAAGAGAAA ATGAACCCAA CATTTCCATA        6660

ATAAACGCA TATTAGCAAG TTTTTAACAC TTGATAATAT GCGTTTTTTC TAAGTGGATT        6720

AGTAGAGTAG AGGATTTTTC TCATATAATA CTCTTCGAAA ATCTCTTCAA ACTACGTCAG        6780

CTTCCATCTG CAACCTCAAA ACAGTATTTT GAGCgaCTtC GTCAGTCTTA TCTACAACCT        6840

CAAAGCAGTG CTTTGAGCAA CCTGTGGCTA GCTTCCTAGT TTGCGCTTTG ATTTTCATTG        6900

AGTATAAGGG AAAGTATAGT GAATTGAAAT AAGATGTGAA CAACTCTATC AGGAAAGTCA        6960

AATTAATTTA TAGAAATATT TTAGCAGCCA AGGTGTACTG TTATAGATTC AATTACACTA        7020

TAATTTAGTG TAATTGAGAA AGGAGAAATG ATTGTGATTG ATGTTGGCTA GGTTATGTTC        7080

AATGATTCCT ACCGTCTCAA ATCTTGTCAG TAAGGAAAAA TAAATTCTTC AAAAGTAGAG        7140

ATTACAAGGC TTGTTTAAGA AAGAATTCAA AGACCTTGAC AAATAAAAAT AAAATGGTTA        7200

TTATAAAAAA TGGTCTGAAA TAGATGATGA TACTTTTCGA AAATCTCTTC AAATACGTCA        7260

GCTCAGCTTT GCCTTGCTGT GTTTTGAGCA AGCTACGGTT AGCTTCCGAG TTTGATTT.'C       7320

ATTTACTAGA AATGAAACTG ATGAGAGATA TCAGTAGACA TTTGAGTCAG GATATTATGG        7380

AAAATGATAA AAAGAGCTCG TGAGATTGGC ATATCAGACT ACTAAAGTAT TGAGTTTGTT        7440

AGGATTTTAG CGACTAGTTA GCTGGGAAAG GAAGATATTT GTGACAAATA ATAAACTGTA        7500

TTCGTTGATA GAATTTAGAA ATAAAATATA TGAAGAATTA GAACTTTCCA GAAGTGATTT        7560

AGCGATTTTA CTATGTGCCA TGCTTATCGC CTCTATCGGA TTAAATATGG ATTCGACTCC        7620

CGTGATTATT GGAGCCATGT TAATCTCTCC TTTGATGACA CCTATTCTGG GAGTGGGGCT        7680

CTCTCTAGCT ATATTTGATT TTAAATTGTT AAGAAAATCT TTTAAAATAT TAGCTATTCA        7740
```

819

AATTCTTGCC AGTCTAATAG CTTCAACACT TTATTTTTAT CTTTCTCCCA TTTCGTATGC   7800

TAGTTCGGAG ATTGTTGCTA GAACCTCTCC GACTATTTGG GATGTTCTCA TTGCTTTTGT   7860

AGGAGGGATA GCAGGTATCA TTGGTGCTAG GAAAAAAGAG AC   7902

(2) INFORMATION FOR SEQ ID NO: 113:

     (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 18627 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

GAAGTTGAAA TGGCCAGCTG ATGAGCAATA TCGGTCATAG AAATCTTCTC AATCAACTTT   60

TGCGCAATTT TTTGGTTGAT AAATACGAGGA ATTTGGTGAT TTTTCTTGAC GATAGAAGTT   120

TCAGCGACCA TCATTTTTGA ACAGTGATAG CACTTGAAAC GACGCTTTCT AAGTAGAATT   180

CTAGTAGGCA TACCAGTTGT CTCAAGGTAA GGAATCTTAG ACGGTTTTTG AAAGTCATAT   240

TTCTTCAATT GGTTTCCGCA CTCAGGGCAA GATGGGGCGT CGTAGTCCAG TTTGGCGATG   300

ATTTCCTTGT GTGTATCTTT ATTGATGATG TCTAAAATCT GGATATTAGG GTCTTTAATG   360

TCTAGTAATT TTGTGATAAA ATGTAATTGT TCCATATGAA TCTTTCTAAT GAGTTGTTTG   420

GTCGCTTTTC ATTATAGGTC ATATGGGACT TTTTTTCTAC AATAAAATAG GCTCCATAAT   480

ATCTATAAGG GATTTACCCA CTACAAATAT TATAGAGCCA AAAATCCTTT GTTTACTAAA   540

CAAGGGATTT TTCTTTTGTC TCTGCTCCTT TTTTGATATA ATAGTTCTAT GTTAAAATCA   600

GAAAAACAAT CACGTTATCA AATGTTAAAT GAAGAATTGT CCTTCCTATT GGAAGGCGAA   660

ACCAATGTTT TGGCTAATCT TTCCAACGCC AGTGCTCTCA TAAAATCACG TTTTCCTAAT   720

ACCGTATTTG CAGGCTTTTA TTTGTTCGAT GGAAAGGAAT TGGTTTTAGG CCCCTTCCAA   780

GGAGGTGTTT CCTGCATCCG TATTGCACTA GGCAAGGGTG TTTGTGGTGA GGCAGCTCAC   840

TTTCAGGAAA CTGTTATTGT TGGAGATGTG ACGACCTATC TCAACTATAT TTCTTGTGAT   900

AGTCTAGCTA AAAGTGAAAT TGTGGTGCCG ATGATGAAGA ATGGTCAGTT ACTTGGAGTT   960

CTGGATCTGG ATTCTTCAGA GATTGAGGAT TACGATGCTA TGGATCGAGA TTATTTGGAA   1020

CAATTTGTCG CTATTTTGCT TGAAAAGACA GCATGGGACT TTACGATGTT TGAGGAAAAA   1080

TCTTAATGTA TCAAGCACTT TATCGAAAAT ATAGAAGTCA AAACTTCTCC CAGTTAGTTG   1140

GTCAAGAAGT TGTGGCTAAG ACTCTTAAAC AAGCGGTGGA GCAAGAGAAA ATAAGTCACG   1200

```
                                        820
CTTATCTTTT TTCTGGTCCT CGTGGAACGG GAAAAACCAG TGTTGCTAAA ATCTTTGCCA     1260

AGGCTATGAA CTGTCCCAAT CAAGTGGGTG GCGAACCTTG CAATAACTGC TATATTTGTC     1320

AAGCAGTGAC GGACGGTAGT TTAGAAGATG TCATTGAAAT GGATGCAGCT TCTAATAATG     1380

GGGTAGATGA AATTCGCGAA ATTCGTGATA AATCTACCTA TGCGCCTAGC CTTGCTCGTT     1440

ATAAGGTTTA TATCATAGAT GAGGTTCACA TGCTGTCTAC AGGGGCTTTT AATGCCCTCC     1500

TAAAGACGCT GGAAGAACCA ACACAGAATG TAGTCTTTAT TTTGGCCACT ACTGAATTGC     1560

ACAAGATTCC TGCTACTATT CTATCCCGTG TGCAACGTTT TGAGTTTAAA TCAATTAAGA     1620

CACAGGATAT TAAGGAACAT ATTCACTATA TCTTAGAAAA AGAAAATATC AGTTCTGAAC     1680

CAGAGGCTGT GGAAATCATT GCCAGACGGG CGGAAGGTGG AATGCGGGAC GCCTTGTCTA     1740

TTTTGGATCA AGCCCTGAGT TTGACACAGG GAAATGAGCT GACGACTGCT ATCTCTGAAG     1800

AAATTACTGG CACCATTAGC CTATCAGCCT TGGATGATTA TGTGGCGGCC TTGTCTCAAC     1860

AGGATGTTCC CAAAGCTTTG TCTTGCTTGA ATCTTCTTTT TGACAATGGT AAGAGCATGA     1920

CTCGTTTTGT GACCGATCTT TTGCACTATT TAAAGAGACTT GTTAATTGTT CAAACAGGGG     1980

GAGCAAATAC TCATCATAGT TCAGTCTTTG TAGAAAATTT GGCACTTCCT CAAAAAAATC     2040

TGTTTGAAAT GATTCGCTTA GCAACAGTGA GTTTAGCAGA TATTAAGTCT AGTTTGCAAC     2100

CCAAGATTTA TGCTGAAATG ATGACCGTCC GTTTGGCGGA AATCAAGTCC GAACCAGCTC     2160

TATCAGGAGC GGTTGAAAAT GAAATTGCTA CGCTGAGACA GGAAGTTGCC CGTCTCAAAC     2220

AAGAGCTTTC TAATGTAGGT GCGGTTCCTA AACAAGTTGC ACCAGCTCCT AGTCGACCAG     2280

CTACGGGCAA AACAGTCTAT CGTGTCGATC GCAATAAAGT GCAATCTATC TTACAAGAGG     2340

CCGTCGAAAA TCCTGATTTA GCACGTCAAA ATTTAATTCG TTTGCAGAAT GCCTGGGGAG     2400

AGGTAATTGA AAGTCTAGGT GGGCCGGACA AGGCTCTGCT AGTTGGTTCT CAACCGGTTG     2460

CTGCCAATGA ACACCATGCT ATTCTTGCTT TTGAGTCTAA CTTCAATGCT GGTCAAACTA     2520

TGAAACGAGA CAATCTCAAT ACCATGTTTG GTAATATCCT CAGTCAGGCG GCAGGTTTTT     2580

CACCTGAGAT TTTAGCTATT TCCATGGAGG AATGGAAAGA AGTTCGCGCA GCCTTTTCAG     2640

CCAAAGCCAA ATCTTCTCAA ACTGAAAAAG AAGTAGAAGA AAGCCTGATT CCAGAAGGAT     2700

TTGAATTTTT GGCTGATAAA GTGAAGGTAG AGGAAGACTA AAGAAAGATT TCATGATACA     2760

ATAAGTTTAT GAATAAACAA CAATTTATTA TTATGGCGCT GTTTACAGCT GCTGAGACCT     2820

ATTTTTTCAA TGAAGCCTGG ATGACTGGCC GCTATATTAT GGCAGCCTTT TGGGCAATTT     2880

TACTCTTTAG AAATTTCCGA GTCAGTTATG TGATGGGCAA AATCGTTGAT GTCATCGATC     2940

AGCATTTTAA TAGGAAAGAC TAGCCCTCAG CTTCCAGACA AAATCAAAGC CTTTTAGGCT     3000
```

821

```
TTTTTTTGTT ATACTAGAAA AGTATATTTA TAGAATTTTT GCTCTATTTC TGGGGAAATC    3060

AGACGTTTTT CTAGTAAGTA CTGTAAAAGT TTTGAAAAAG AAAGGAACTA TCATGTCAGT    3120

ATTAGAGATC AAAGATCTTC ACGTTGAGAT TGAAGGAAAA GAAATTTTAA AAGGGGTTAA    3180

CCTGACCCTG AAAACAGGAG AAATTGCCGC TATCATGGGA CCAAATGGTA CAGGTAAATC    3240

GACTCTTTCT GCCGCTATCA TGGGAAATCC AAACTATGAA GTAACTAAAG GTGAAGTTTT    3300

GTTTGATGGC GTAAACATCC TTGAGTTGGA AGTGGATGAG CGTGCGCGTA TGGGACTTTT    3360

CCTTGCTATG CAATACCCAT CAGAAATCCC TGGAATTACC AATGCTGAGT TTCTTCGTGC    3420

CGCTATGAAT GCGGGTAAAG AAGATGATGA GAAGATTTCA GTTCGTGAGT TTATTACTAA    3480

GCTAGATGAA AAAATGGAAT TGCTCAACAT GAAAGAAGAA ATGGCAGAGC GTTACCTCAA    3540

CGAAGGCTTC TCTGGTGGTG AGAAAAAACG CAATGAAATT CTTCAACTTT TGATGTTGGA    3600

GCCAACATTT GCTCTTTTGG ACGAGATTGA CTCAGGTCTT GATATTGACG CTCTTAAAGT    3660

TGTGTCTAAA GGTGTCAATG CCATGCGTGG TGAAGGTTTT GGTGCTATGA TCATCACTCA    3720

CTACCAACGT CTTTTGAACT ATATCACACC TGATGTGGTA CACGTGATGA TGGAAGGTCG    3780

TGTTGTCCTT TCTGGTGGTC CAGAATTGGC TGCGCGTTTG GAACGTGAAG GATACGCAAA    3840

ATTAGCTGAA GAACTTGGCT ACGACTACAA GGAAGAATTG TAATTCCCTC GTATCTTTTA    3900

GGAGAAGTAA ATGACTAGAG AAAATATTAA ACTTTTTTCA GAAATGCACG CTGAACCAAG    3960

CTGGTTGGCT GATCTCCGTC AAAAAGCTTT TGACAAGATT GAGACTTTGG AATTACCAGT    4020

TATTGAGTGT GTCAAATTCC ACCGTTGGAA TCTGGGTGAT GGAACGATTA CAGAAAATGA    4080

GCCATCAGCA AATGTTCCAG ATTTCACAGC TTTAGATCAT CACTTGAAGT TGGTGCAAGT    4140

AGGAACTCAA ACTGTTTTCG AACAAACTCC AGTTGAGTTA GCTGAACAGG GTGTTGTCTT    4200

CACAGACTTT CACTCAGCTT TAGAAGAAAT TCCAGAGCTG ATCGAAGAAT TCTTCATGTC    4260

ATCTGTTAAG TATGATGATG ACAAGTTGGC GGCTTACCAC ACAGCTTACT TTAACAGTGG    4320

TGCTGTACTC TATATTCCAG ATAACGTAGA AATCACAGAG CCAATTGAAG GAATTTTCTA    4380

CCAAGATAGC GATAGCAATG TGCCGTTTAA CAAGCATATT ATGATTATCG TTGGTAAAAA    4440

TTCTAAGATT AGTTATCTGG AGCGTTTAGA GTCACGCGGT GAAGGAAGTG ACAAAGCAAC    4500

TGCCAATATC ACAGTGGAAG TGATTGCACG TTCTGGTGCG CAAGTCAAGT TTGCTGCTAT    4560

CGACCGTCTA GGTGAAAACG TCACTGCCTA CATTAGCCGT CGTGGTAAAT TAGGCAACGA    4620

TGCAAGTATT GACTGGGCTA TCGGTGTCAT GAACGAAGGA AATGTCGTTG CTGATTTTGA    4680

TAGTGACTTG ATTGGTAATG GTAGCCATGC TGACCTCAAG GTTGTAGCTC TTTCAAGTGG    4740
```

822

```
TCGTCAGGTA CAAGGGATTG ATACTCGTGT AACTAACTAT GGCTGCAACT CAATCGGAAA        4800

CATTCTACAA CATGGGGTTA TCCTTGAAAA AGCAACTTTG ACTTTCAATG GTATCGGCCA        4860

CATCATCAAG GGTGCTAAGG GAGCAGATGC GCAACAAGAG AGCCGTGTTC TCATGCTTTC        4920

AGACCAAGCG CGTTCAGATG CTAACCCAAT TCTTTTGATT GATGAAAATG ACGTAACTGC        4980

AGGCCATGCA GCCTCTATTG GTCAGGTAGA TCCAGAAGAT ATGTACTACC TCATGAGTCG        5040

TGGCTTGGAT AAGGCAACTG CAGAGCGTTT GGTTGTTCGT GGTTTCCTTG GATCTGTTAT        5100

CGTGGAGATT CCAGTCAAGG AAGTTCGTGA TGAAATGATT GCAACTATCG AAGAGAAATT        5160

GTCAAAACGC TAAGGGGCAG CCTATGTTAG ATGTAGAAGC GATTCGCAAG GATTTTCCAA        5220

TTTTAGATCA GATTGTCAAT GATGAACCTC TGGTCTATCT GGACAATGCT GCGACGACAC        5280

AAAAACCACT AGTAGTTCTG AAAGCTATTA ACAGCTACTA TGAGCAGGAC AATGCCAATG        5340

TTCACCGTGG TGTCCATACC TTAGCGGAAC GAGCGACAGC TTCTTATGAA GCTGCTCGTG        5400

AAACCATTCG TAAGTTTATT AATGCAGGCT CTACAAAGGA AGTTCTCTTT ACCAGAGGAA        5460

CGACAACCAG CCTTAACTGG GTGGCACGCT TTGCTGAGGA AATTCTCACT GAGGGAGACC        5520

AGGTCTTGAT TTCAGTAATG GAACACCATT CTAATATCAT TCCATGGCAG GAAGCTTGTC        5580

GAAAGACTGG AGCAGAGCTT GTCTATGTCT ATCTTAAAGA CGGTGCCTTG GATATGGAGG        5640

ATTTGCGAGC TAAATTGACT GATAAGGTTA AATTTGTTTC CCTAGCTCAT GCCTCCAATG        5700

TTCTTGGTGT GGTCAATCCG ATCAAGGAAA TCACTCAATT AGCCCACCAA GTTGGGGCAA        5760

TTATGGTAGT GGATGGTGCT CAATCTACAC CTCATATGAA GATTGATGTC CAGGACTTGG        5820

ATCTGGACTT TTTCGCCTTT TCGGGTCACA AGATGGCTGG TCCGACTGGT ATCGGTGTCC        5880

TTTACGGCAA AGAAAAGTAT CTTGAGCAAA TGTCTCCAGT AGAATTTGGC GGCGAGATGA        5940

TTGATTTTGT CTACGAGCAA TTTGCTAGTT GGAAGGAATT GCCTTGGAAA TTTGAGGCTG        6000

GAACGCCAAA TATGGCAGGA GCTATTGGAC TTGCGACTGC AGTTGATTAT CTGGAAAAGA        6060

TTGGTATGGA TGCCGTTGAA GCTCATGAAC AGGAATTGAT TGCGTACGTC TATCCAAAAC        6120

TGCAGGCAAT TGAGGGATTG ACCATTTACG GTTCTCAGGA TTTGGCTCAA CGTTCGGGTG        6180

TTATTGCCTT TAACCTAGGT GATCTCCATC CTCACGATCT TGCGACGGCT CTGGATTATG        6240

AAGGAGTGGC TGTTCGTGCT GGTCACCATT GTGCGCAACC CTTGCTTCAG TATTTGGAAG        6300

TCCCAGCAAC AGCTCGTGCA AGTTTTTATA TCTACAATAC CAAGGCAGAT TGCGACAAAC        6360

TAGTCGATGC CCTACAAAAG ACAAAGGAGT TTTTCAATGG CACTTTCTAA ACTAGATAGC        6420

CTTTATATGG CAGTGGTAGC AGACCATTCG AAAAATCCAC ATCACCAAGG GAAGTTAGAA        6480

GATGCTGAGC AAATCAGTCT CAACAATCCG ACTTGTGGGG ATGTCATCAA CCTCTCTGTC        6540
```

823

```
AAGTTTGATG CAGAGGACCG TTTGGAAGAT ATTGCTTTTC TAAATTCAGG ATGCACGATT      6600

TCAACTGCTT CTGCTAGTAT GATGACAGAT GCCGTTTTAG GAAAAACCAA ACAAGAAATT      6660

TTAGAACTGG CGACTATTTT TTCTGAAATG GTTCAAGGGC AAAAAGATGA GCGTCAAGAC      6720

CAACTTGGAG ACGCGGCATT CTTGTCAGGT GTTGCCAAAT TCCCTCAAAG AATCAAGTGT      6780

GCAACCCTAG CTTGGAATGC CCTTAAGAAA ACAATTGAAA ATCAAGAAAA ACAGTAAGAC      6840

AAGTTTCTTT TGTCTTATGA ATTATTAGAA ATGAAGAAAG AAAGGATACT ATGGCTGAAG      6900

AAAGAGTAGA ACCAAAACCA ATTGACCTTG GTGAATATAA ATTTGGTTTC CATGACGATG      6960

TAGAGCCTGT CTTATCGACA GGAAAAGGAC TCAACGAAGG TGTTATTCGT GAATTATCTG      7020

CTGCTAAGGG TGAGCCTGAG TGGATGTTGG AGTTCCGTTT GAAGTCTTAT GAAACCTTCA      7080

AAAAAATGCC CATGCAAACT TGGGGAGCAG ACTTGTCAGA GATTGACTTT GATGACTTAA      7140

TCTACTACCA AAAACCATCT GACAAACCAG CCCGTTCTTG GGATGATGTA CCTGAAAAGA      7200

TTAAAGAAAC CTTTGAACGT ATCGGGATTC CAGAAGCTGA ACGTGCTTAT TTAGCAGGGG      7260

CTTCTGCCCA GTACGAGTCA GAAGTGGTTT ACCACAACAT GAAGGAAGAG TTCCAAAAAT      7320

TAGGTATTAT CTTTACAGAT ACAGATTCCG CACTCAAGGA ATACCCAGAC TTATTTAAAC      7380

AATACTTTGC GAAGTTGGTA CCGCCGACAG ATAACAAGTT GGCAGCCCTC AACTCAGCAG      7440

TATGGTCGGG TGGAACTTTT ATCTACGTGC CAAAAGGTGT CAAGGTAGAT ATTCCACTTC      7500

AAACTTATTT CCGTATCAAT AACGAAAATA TAGGTCAGTT CGAACGTACC TTGATTATCG      7560

TTGATGAGGG AGCAAGCGTC TACTACGTAG AAGGATGTAC AGCACCAACA TATTCAAGCA      7620

ATAGCTTACA CGCTGCCATT GTAGAAATTT TTGCTTTGGA CGGAGCTTAT ATGCGTTATA      7680

CAACTATCCA AAACTGGTCT GATAACGTCT ATAACTTGGT AACAAAGCGT GCTAAGGCTC      7740

AAAAGGATGC CACTGTTGAG TGGATTGATG GAAACTTGGG TGCCAAAACG ACTATGAAAT      7800

ATCCATCTGT TTACCTTGAT GGAGAAGGAG CGCGTGGTAC CATGCTCTCT ATCGCCTTTG      7860

CTAATGCAGG GCAACACCAA GACACGGGTG CTAAGATGAT TCACAATGCT CCACATACCA      7920

GCTCGTCTAT TGTGTCTAAA TCCATCGCTA AAGGTGGAGG AAAGGTTGAC TACCGTGGAC      7980

AAGTCACCTT TAACAAGAAC TCTAAGAAAT CTGTTTCCCA CATTGAATGT GATACCATTA      8040

TCATGGATGA CTTGTCAGCA TCAGATACTA TTCCATTTAA TGAAATTCAC AACTCGCAAG      8100

TGGCTTTGGA ACACGAAGCC AAAGTATCTA AGATTTCAGA AGAGCAATTG TATTATCTCA      8160

TGAGCCGTGG ATTGTCAGAA TCTGAGGCAA CTGAAATGAT TGTCATGGGA TTTGTAGAAC      8220

CCTTTACAAA AGAACTTCCA ATGGAATACG CAGTTGAGCT GAACCGCTTG ATTAGCTATG      8280
```

824

```
AAATGGAGGG ATCAGTTGGA TAAAATTTGA TTTTATACTC TTCGAAAATC TCTTCAAACC    8340

ACGTCAGCAT CGCCTTACCG TATGTATGGT TwCTGAtTCG TCAGTTTCAT CTACAACCTC    8400

AAAACAGTGT TTTGAGCAAC tGCGGCTAGC TTCCTAGTTT GTTCTTTGAT TTTGAGTATT    8460

AGATTTACTC AAAATCAAGG ATTTTGAAGA TGAACTTGTA TCAAAAAATC GCGGTTTAAA    8520

ATCGCGATTT TTTATAATTT CTCGTTAACA AAGCGGACAA ACTGATTCCA CCAAACTTTT    8580

AAGAAGAAGG CTTTTTCAAT TTTCTTGTCT GCTACCATTT CGAAACTAGG GCGCTCTGTG    8640

GTGATGTAAC CTTGACCAAT CAAGTCCTTG TCTTCATAAG TCAAATGGCC AACCACTGTT    8700

CCAGCTTCAA GTGGTGCTGG GATTGCTTTG GAATCAGGTG TGAATTGAAC AGATTGGGAA    8760

GATTGATTCC CAACACGTTC GATTAGATAG ATATCCTCTG GAGCCACTGC AGTTACTGTA    8820

TCTTCTTTTC CATCTTGTAC AGGGGCTTTG CTATCTTGAT AGGCATCGCC TTGTTGAACG    8880

ATTTTGCGAA GTGTAAATGT AGAAGAAATA TAATCCATTA GGGAAGATGT AGCTGTAAAT    8940

CGAGCGTAAG GATTATTGTC TTGATGATCT GCATTTAAAA CAACTGTGAT GACTCTCATG    9000

CCTTTTTCGA CAGTAGTACC AACAAAAGAC TCTCCAGCCT TATCTGTTGT TCCTGTTTTT    9060

AGCCCATCAA AACCACCACG GTAAGCAGGC ATACCTTCTA ACATGTAGTT GGTTGAAGTG    9120

ATTGTCATCC CAGCAAAAGT AGAAGAAGGT TTTTTGGTGA TTTCTAAGAC TTGTGGGTAT    9180

TTTTTGATGA GGTTGCGAGC AACGATAGCG ACATCATAAG CACTAAGCTT ATTTTCCTCA    9240

TCTTTTTTAG AACCTGGGTA AATGTTATCC CCTAGAGTTT CATTGTTAAG ACCTGTCGTA    9300

TTGACAACAG TGGCATCCTG AATTCCCCAT TCCAAGAGTT TTGCCCGCAT CATATCGACG    9360

AAATCTTTTT CTGAGCCAGC AATTTTCTCA GCTAGGGCAA TAGCGGCGCT GTTGGCACTA    9420

GATACCAGAG TTGCTTCAAG CAACTCTTCG ACAGTATAAT TACGGGCCTC CATAGGAATA    9480

TTACTGGCTT CAGAATTTGT CGTCAATTGA TAAGGATAAT CAGAAATATC TACAGGAGTG    9540

GAGAGGGTAA TACTTCCGTT TTCCAAAGCT TCATAGACCA GATAAACAGT AATCAATTTT    9600

GTTATGGAAG CAATTTCGAC AGGTTGCGTT GCATCCTTCT CATAGAGAAT TTTACCAGTA    9660

TTTGCCTCAA CAGCAATCGC ATGTTTAGCG GCAATGGTAA AATCTTGAGC AACAGCAGTA    9720

GAAGCACCCC CTAAAAGAGA GACAGTTAAC AAAGTTAAAA ATATTTTTTT CATAGTAGTC    9780

TTATTCTATC ATAAAGAAAA AAAATATTCT TGCTTTAATA ATTCATCTGT TAAGCTTTTT    9840

GAAAATATGG TAAAATAAAG TAAGGGAGGT AACTCATGTT TCGTAGAAAT AAATTATTTT    9900

TTTGGACCAC AGAAATTTTA CTCTTAACCA TCATCTTTTA CCTATGGAGA CAGATGGGGT    9960

CTTTGATTAA CCCTTTTGTT AGCGTGCTTA ATACAATTAT GATTCCATTT TTATTAGGGG    10020

GCTTTTTTTA TTATTTGACA AACCCTATTG TTACTTTCTT AAATAAAGTC TGTAAACTCA    10080
```

825

```
ATCGTTTGCT TGGTATTTTA ATTACCTTGT GTACTTTGGT CTGGGGAATG GTCATAGGTG    10140

TTGTCTATCT CTTACCTATT TTGATTAATC AGTTATCTAG TTTGATTATA TCTAGTCAAA    10200

CTATTTATAG TCGAGTACAA GACTTAATCA TAGACTTATC TAATTATCCT GCGCTCCAGA    10260

ATTTGGATGT AGAAGCTACA ATTCAGCAGT TAAACTTATC CTATGTTGAT ATTCTTCAAA    10320

ATATCCTAAA TAGCGTATCA AATAGTGTGG GGAGCGTCTT GTCAGCTCTT ATCAGTACTG    10380

TTTTGATTTT GATTATGACT CCAGTTTTTT TGGTTTATTT CTTATTAGAT GGACATAAAT    10440

TCTTGCCCAT GCTTGAAAGA ACGATTCTAA AGAGGGATCG CTTGCATATT GCAGGCTTAT    10500

TAAAGAATTT AAATGCGACG ATTGCTCGCT ATATTAGTGG AGTTTCGATT GACGCAATCA    10560

TTATAGGTTG TTTGGCTTAT ATTGGCTATA GTATTATTGG TTTAAAATAT GCTTTAGTTT    10620

TTGCCATTTT TTCTGGTGTA GCCAATTTAA TTCCTTATGT GGGGCCAAGT ATTGGTTTGA    10680

TTCCTATGAT CATCGCAAAT ATATTCACTG ATCCCCATAG ACTGCTGATT GCAGTGATTT    10740

ATATGCTTGT TGTTCAGCAG GTAGATGGCA ATATCTTATA TCCTCGAATC GTAGGAAGTG    10800

TTATGAAGGT TCATCCAATC ACGATTTTAG TTTTACTTTT GTTGTCAAGC AATATCTATG    10860

GTGTAGTTGG AATGATTGTC GCAGTGCCAA CCTATTCTAT CTTGAAAGAA ATTTCTAAGT    10920

TCTTATCCCA TTTGTATGAA AATCATAAAA TAATGAAAGA ACGAGAAAGA GAATTAGCTA    10980

AGTAAAAGTC AGGAGAACCC TGATTTTTCT TTACTGGAAG TGGCCTTTAG ATTAGAAGAC    11040

TGAAAATAAG TTAAAGTCTT AAACTAATTT TCACAGCTAA GAATAGTAGA AGTTAATCTG    11100

ATAAAAATCG AAAAAACCAG TGGAATTCTG TGTCAGGGTA AGTTCCACTG GTTTTCATAG    11160

TCTATTAAAG TTCGAATGAA ACCTATTTAT AGTAGATTGA AACTAGAATA GTACACCTCT    11220

AATTCTAAAA CATTGTTAGA AATCGATTTG ACTGTCCTGA TCTATTCGTT CTATTCTTAT    11280

TTCATTTTAC TATATTTTGG TGCAATAAGT GAAAAGTAGT CCGAATAATA TAAGGATTGA    11340

TTTTATAGTT TTTAAACTCA AATGAATTGA AATAAAGAGA GTACGAAAAT TCTCATCTGA    11400

AAGTATTTTA GAATAATTCT CTTCGTGAAT TTCTTCAAAA CAGATAGCTT CATCTTAGGT    11460

ATGTGATTTC TTTTTGCATT TTTGAGTTAG ATAAGGTATA ATGATTTTAT TGTCTTTTGG    11520

GGTCGTTACG GATTCGACAG GCATTATGAG GCATATTTTG CGACTCGTGT GGCGACGTAA    11580

ACGCTCAGTT AAATATAACT GCAAAAAATA ACACTTCTTA CGCTCTAGCT GCCTAAAAAC    11640

CAGCAGGCGT GACCCGATTT GGATTGCTCG TGTTCAATGA CAGGTCTTAT TATTAGCGAG    11700

ATACGATTAA GCCTTGTCTA GCGGTTTGAT AAGAGATTGA TAGACTCGCA GTTTCTAGAC    11760

TTGAGTTATG TGTCGAGGGG CTGTTAAAAT AATACATAAC CTATGGTTGT AGACAAATAT    11820
```

826

```
GTTGGCAGGT GTTTGGACGT GGGTTCGACT CCCACCGGCT CCATTATTCC TTTGCATTCT    11880

TTTGCATTCC TTGGTAAAAC GTTGTTAAAT CAACGTTTTT TATTTTTATC TTTGGTATTC    11940

CTTTGCATTC TTTTGCTAAA AAGGGAGTCA CAAACAGACC CTATTTTAAA AAAGGATAGA    12000

AAAAAGGATA CAACATTTGT CGCATCCTAA AAATAATCTT TTTTCGACGG AAGACATGGG    12060

ATTCGAACCC ACGCACGCTA TTACACGCCT ACCGCGTTTC CAACACGGCC TCTTAAGCCT    12120

CTTGAGTAAT CTTCCAATAC TTACTCAAAT AGTCTACCAT AAAGGCTCTT ATCTTGCAAT    12180

AAAAATTCTA GAAATAAGAA AAATGATAGA TTTTGAAAGA AAATGATAAA AAATGCTTGA    12240

CTTCGAAAGA AAGTATGATA GAATGAATAG TGTAAACGAT AACAGGAGGT GATTCAGTGT    12300

TAAAAACAGA ACGTAAACAA CTAATTTTAG AGGAGTTAAA TCAACATCAT GTAGTTTCTC    12360

TAGAAAAATT AGTTAGTTTG CTAGAAACGT CAGAATCAAC GGTTCGAAGA GACTTGGATG    12420

AGTTGGAAGC GGAAAACAAG CTTCGTCGTG TGCATGGTGG AGCAGAACTC CCCTACTCCT    12480

TACAGGAAGA AGAAACCATT CAAGAAAAAT CTGTCAAAAA CCTTCAAGAA AAGAAATTGC    12540

TGGCTCAGAA AGCAGCCTCT CTCATTAAAG AAAAAGATGT CATCTTTATC GATGCTGGAA    12600

CAACAACTGC TTTTTTGATT CATGAATTGG TCAATAAGAA TGTTACAGTT GTGACCAACT    12660

CCATTCACCA TGCCGCTCAG TTGGTTGAAA AGCAGAwTCC AACTGTCATG GTTGGAGGAA    12720

ACGTCAAGAC GGCGACAGAT GCTAGTATCG GGGGCGTTGC TCTTAACCAG ATTAACCAAT    12780

TGCACTTTGA CCGTGCCTTT ATCGGAATAA ATGGTGTTGA CGATGGCTAT TATACGACTC    12840

CTGATATGGA GGAGGGAGCT GTGAAAAGAG CTATTTTGGA GAATGCCAAG CAGACCTACG    12900

TCTTGGTGGA TTCGTCAAAA ATTGGACAAA CTTGCTTTGC CAAGGTAGCC CCACTCAAAC    12960

GCGCTATCGT TATCACTAGT CAAGGGCATG AGCTCTTGCA GGTTATTAAG GAGAAAACGG    13020

AGGTAATAGA AGTATGATTT ATACAGTCAC ACTCAATCCA TCCATTGACT ATATCGTTCG    13080

TTTGGACCAA GTCAAAGTTG GTAGTGTCAA TCGTATGGAC AGTGATGATA AGTTTGCTGG    13140

TGGGAAAGGA ATCAATGTCA GCCGTGTCTT GAAACGTTTG AATATACCAA ATACAGCGAC    13200

GGGATTTATC GGTGGCTTTA CTGGTAAATT TATCACAGAT ACTTTAGCAG AGGAAGAAAT    13260

CGAGACACGT TTTGTCCAGG TGGCAGAAGA TACTCGTATC AATGTTAAAA TCAAAGCAGA    13320

CCAAGAAACA GAAATCAACG GAACGGGTCC AACTGTTGAA TCGGTTCAGC TAGAAGAATT    13380

GAAAGCTATT TTATCTAGTC TGACAGCAGA AGATACAGTT GTCTTTGCAG GTTCAAGTGC    13440

TAAAAATCTA GGCAATGTTA TCTATAAGGA TTTGATTTCC TTGACGCGCC AGACTGGTGC    13500

GCAAGTGGTC TGTGACTTTG AAGGACAGAC CTTAATTGAT AGTTTGGACT ACCAGCCTCT    13560

TCTTGTAAAA CCAAACAATC ATGAACTTGG AGCGATTTTT GGGGTTAAAC TCGAAAGTTT    13620
```

827

```
AGATGAAATT GAGAAATACG CTCGTGAGTT ACTGGCTAAG GGTGCTCAAA ATGTTATTAT        13680

CTCTATGGCT GGTGATGGTG CCCTTCTTGT CACATCTGAG GGAGCTTACT TCGCTAAACC        13740

AATCAAAGGA ACAGTCAAAA ATTCAGTTGG AGCTGGTGAT TCTATGGTTG CTGGATTCAC        13800

AGGTGAATTT GTCAAATCAA AAGACGTAGT AGAAGCCTTC AAATGGGGAG TGGCTTGCGG        13860

AACGGCAACT ACCTTCTCAG ATGACTTGGC AACGGCGGAA TTTATTAAAG AAACATATGG        13920

AAAAGTTGAG GTAGAAAAAC GATGAAAATT CAAGACCTAT TGAGAAAAGA TGTCATGTTG        13980

CTAGATTTGC AGGCAACTGA AAAAACAGCT GTCATCGACG AGATGATTAA AAATTTGACA        14040

GACCACGGTT ATGTAACAGA TTTTGAAACA TTTAAAGAAG GAATTTTGGC GCGTGAAGCT        14100

TTGACTTCTA CTGGTTTGGG TGATGGAATC GCAATGCCTC ACAGCAAAAA CGCTGCTGTC        14160

AAAGAAGCGA CAGTTCTATT TGCTAAGTCA AATAAGGGTG TTGACTACGA GAGCTTGGAT        14220

GGACAAGCAA CTGACCTCTT CTTCATGATT GCAGCTCCAG AAGGTGCCAA TGATACTCAC        14280

TTGGCAGCCT TGGCAGAATT GTCTCAATAC TTGATGAAAG ACGGTTTTGC AGACAAACTT        14340

CGTCAAGCAA CATCTGCAGA CCAAGTTATC GAACTTTTTG ACCAAGCTTC AGAAAAAACT        14400

GAGGAACTTG TTCAAGCACC TGCTAATGAC TCTGGTGACT TTATCGTAGC TGTTACAGCT        14460

TGTACAACAG GTATTGCCCA CACTTACATG GCCCAAGAAG CCCTTCAAAA AGTAGCTGCT        14520

GAAATGGGGG TTGGTATCAA GGTCGAAACC AACGGTGCTA GCGGTGTTGG AAATCAACTA        14580

ACTGCAGAAG ATATCCGTAA GGCTAAAGCT ATTATCATTG CAGCAGACAA GGCCGTTGAA        14640

ATGGATCGAT TTGATGGAAA ACCATTGATC AATCGTCCAG TTGCTGACGG TATCCGTAAG        14700

ACAGAAGAGC TAATTAACTT GGCTCTTTCA GGAGATACTG AAGTCTACCG TGCCGCTAAT        14760

GGTGCCAAAG CTGCAACAGC CTCTAACGAA AAACAAAGCC TTGGTGGTGC CTTGTACAAA        14820

CACTTGATGA GTGGTGTATC TCAAATGTTA CCATTCGTTA TCGGTGGTGG TATCATGATT        14880

GCCCTTGCCT TCTTGATTGA CGGTGCTTTG GGTGTTCCAA ATGAAAACCT TGGCAATCTT        14940

GGTTCTTACC ATGAGTTAGC TTCTATGTTC ATGAAAATTG GTGGAGCTGC CTTTGGTTTG        15000

ATGCTTCCAG TCTTTGCGGG TTATGTTGCC TACTCTATTG CTGAAAAACC GGGTTTGGTA        15060

GCAGGTTTCG TGGCTGGTGC TATTGCCAAA GAAGGTTTTG CCTTTGGTAA AATTCCTTAT        15120

GCCGCAGGTG GTGAAGCAAC TTCAACTCTT GCAGGTGTCT CATCTGGTTT CCTAGGTGCC        15180

CTTGTTGGTG GATTTATCGC AGGTGCCTTG GTTCTTGCCA TCAAGAAATA CGTTAAAGTT        15240

CCTCGTTCAC TCGAAGGTGC TAAATCAATC CTTCTATTGC CACTTCTTGG AACAATCTTG        15300

ACAGGATTTG TTATGCTAGC TGTGAATATC CCAATGGCTG CAATCAACAC TGCTATGAAT        15360
```

828

```
GACTTCCTAG GCGGTCTTGG AGGAGGTTCA GCTGTCCTTC TTGGTATCGT CCTTGGTGGA     15420

ATGATGGCTG TTGACATGGG TGGACCAGTT AATAAAGCAG CTTATGTCTT TGGTACAGGT     15480

ACGCTTGCAG CAACTGTTTC TTCAGGTGGT TCTGTAGCCA TGGCAGCAGT TATGGCTGGA     15540

GGAATGGTGC CACCACTTGC AATCTTTGTC GCAACTCTTC TTTTCAAAGA TAAATTTACT     15600

AAGGAAGAAC GTAACTCTGG TTTGACAAAC ATCATCATGG GCTTGTCATT TATCACTGAG     15660

GGAGCGATTC CATTTGGTGC CGCTGACCCA GCTCGTGCGA TTCCAAGCTT CATCCTTGGT     15720

TCAGCAGTAG CAGGTGGACT CGTTGGTCTT ACTGGTATCA AACTCATGGC GCCACACGGA     15780

GGAATCTTCG TTATCGCCCT TACTTCAAAT GCTCTCCTTT ACCTCGTTTC TGTCTTGGTA     15840

GGAGCAATCG TAAGTGGTGT GGTTTATGGT TACCTACGCA AACCACAAGC ATAAAAAATA     15900

GAAAAATGAA AAGATTGGAC CGTTTGGTGC AGTCTTTTTC TCTTCCCGAA ATGCCTGTGA     15960

AATATGGTAT AATAGAAGAA TGGCAAACAA GAATACAAGT ACAACAAGAC GGAGACCGTC     16020

TAAAGCAGAA CTGGAAAGAA AAGAAGCGAT TCAACGAATG TTGATTTCGT TAGGAATTGC     16080

GATTTTATTG ATTTTCGCAG CCTTCAAATT AGGGGCTGCA GGTATAACCC TTTATAATTT     16140

AATTCGCTTG CTAGTGGGTA GCCTAGCTTA TCTGGCGATA TTCGGCCTAT TAATCTATCT     16200

CTTCTTTTTC AAGTGGATAC GAAAACAGGA AGGACTCTTA TCTGGCTTTT TCACCATATT     16260

TGCTGGCTTA CTCTTGATTT TTGAGGCCTA CTTGGTTTGG AAATATGGTT TGGACAAGTC     16320

CGTTCTAAAA GGGACCATGG CTCAGGTTGT GACAGATCTG ACTGGTTTTC GAACGACTAG     16380

CTTTGCTGGA GGGGGCTTGA TCGGGGTCGC TCTTTATATT CCAACAGCCT TTCTCTTTTC     16440

AAATATCGGA ACTTACTTTA TTGGTTCTAT CTTGATTTTA GTGGGTTCTC TCCTAGTCAG     16500

CCCTTGGTCT GTTTACGATA TTGCTGAATT TTTTCAGTAGA GGCTTTGCCA AATGGTGGGA     16560

AGGGCACGAG CGTCGAAAAG AGGAACGCTT TGTCAAACAA GAAGAAAAAG CTCGCCAAAA     16620

GGCTGAGAAA GAGGCTAGAT TAGAACAAGA AGAGACTGAA AAAGCCTTAC TCGATTTGCC     16680

TCCTGTTGAT ATGGAAACGG GTGAAATTCT GACAGAGGAA GCTGTTCAAA ATCTTCCACC     16740

TATTCCAGAA GAAAAGTGGG TGGAACCAGA AATCATCCTG CCTCAAGCTG AACTTAAATT     16800

CCCTGAACAG GAAGATGACT CAGATGACGA AGATGTTCAG GTCGATTTTT CAGCCAAAGA     16860

AGCCCTTGAA TACAAACTTC CAAGCTTACA ACTCTTTGCA CCAGATAAAC CAAAAGATCA     16920

GTCTAAAGAG AAGAAAATTG TCAGAGAAAA TATCAAAATC TTAGAAGCAA CCTTTGCTAG     16980

CTTTGGTATT AAGGTAACAG TTGAACGGGC CGAAATTGGG CCATCAGTGA CCAAGTATGA     17040

AGTCAAGCCG GCTGTTGGTG TAAGGGTCAA CCGCATTTCC AATCTATCAG ATGACCTCGC     17100

TCTAGCCTTG GCTGCCAAAG ATGTCCGGAT TGAAGCACCA ATCCCTGGGA AATCCCTAAT     17160
```

829

```
CGGAATTGAA GTGCCCAACT CCGATATTGC CACTGTATCT TTCCGAGAAC TATGGGAACA        17220

ATCGCAAACG AAAGCAGAAA ATTTCTTGGA AATTCCTTTA GGGAAGGCTG TTAATGGAAC        17280

CGCAAGAGCT TTTGACCTTT CTAAAATGCC CCACTTGCTA GTTGCAGGTT CAACGGGTTC        17340

AGGGAAGTCA GTAGCAGTTA ACGGCATTAT TGCTAGCATT CTCATGAAGG CGAGACCAGA        17400

TCAAGTTAAA TTTATGATGG TCGATCCCAA GATGGTTGAG TTATCTGTTT ACAATGATAT        17460

TCCCCACCTC TTGATTCCAG TCGTGACCAA TCCACGCAAA GCCAGCAAGG CTCTGCAAAA        17520

GGTTGTGGAT GAAATGGAAA ACCGTTATGA ACTCTTTGCC AAGGTGGGAG TTCGGAATAT        17580

TGCAGGTTTT AATGCCAAGG TAGAAGAGTT CAATTCCCAG TCTGAGTACA AGCAAATTCC        17640

GCTACCATTC ATTGTCGTGA TTGTGGATGA GTTGGCTGAC CTCATGATGG TGGCCAGCAA        17700

GGAAGTGGAA GATGCTATCA TCCGTCTTGG GCAGAAGGCG CGTGCTGCAG GTATCCACAT        17760

GATTCTTGCA ACTCAGCGTC CATCTGTTGA TGTCATCTCT GGTTTGATTA AGGCCAATGT        17820

TCCATCTCGT GTAGCATTTG CGGTTTCATC AGGAACAGAC TCCCGTACGA TTTTGGATGA        17880

AAATGGAGCA GAAAAACTTC TTGGTCGAGG AGACATGCTC TTTAAACCGA TTGATGAAAA        17940

TCATCCAGTT CGTCTCCAAG GCTCCTTTAT CTCGGATGAC GATGTTGAGC GCATTGTGAA        18000

CTTCATCAAG ACTCAGGCAG ATGCAGACTA CGATGAGAGT TTTGATCCAG GTGAGGTTTC        18060

TGAAAATGAA GGAGAATTTT CGGATGGAGA TGCTGGTGGT GATCCGCTTT TTGAAGAAGC        18120

TAAGTCTTTG GTTATCGAAA CACAGAAAGC CAGTGCGTCT ATGATTCAGC GTCGTTTATC        18180

AGTTGGATTT AACCGTGCGA CCCGTCTCAT GGAAGAACTG GAGATAGCAG GTGTCATCGG        18240

TCCAGCTGAA GGTACCAAAC CTCGAAAAGT GTTACAACAA TAAAAAAATA GCTTCTTTCC        18300

AAGTTTGGAG GGAAGCTATT TTAGTGGCTA TTGATTGCTT TTATTTTCTG AAGTTGGCGC        18360

ATTGGACTGT TTTTCGTTTT CAGTAGCAGG TTTACTTGAA GCAGGAGTAG AAGAGTCCTG        18420

AGTTGCTGTT TTCTGATCTT CTTTTTTCTC TTCCTTGACG CTAGATTTTG GTGTTTCCTC        18480

TTGCTGTGTT TTTTCTTGAC TAGTGTTAGT CTCTTTAGTT GGACTGGTGT TTTCCTTAGG        18540

GGATTCCTTT TGGATTTCTT TGACAATGGT TGTCGTCTGG CTTGTCGTAG GTTCTTTTTT        18600

AATATTTTTG TTATTATCCA AGGCGTT                                         18627
```

(2) INFORMATION FOR SEQ ID NO: 114:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 2560 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

830

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

```
TAAAATACGT TACCTTGCTT CTGCACGTTC AGCAGGTAAG TCATTGAAAT TTAAAGATCA      60

AGATATTACA ATTGAAGAAA CGACTGAAAC AGCTTTTGAA GGAGTTGATA TTGCTCTCTT     120

TTCAGCAGGT AGTTCTACAT CAGCTAAGTA TGCACCATAC GCAGTAAAAG CTGGCGTGGT     180

AGTAGTAGAT AATACATCTT ATTTCCGTCA AAATCCAGAT GTTCCTTTGG TTGTTCCAGA     240

GGTCAATGCT CATGCACTTG ATGCTCACAA CGGAATCATT GCCTGCCCTA ATTGTTCAAC     300

AATTCAAATG ATGGTGGCTC TTGAGCCGGT TCGCCAAAAA TGGGGCTTGG ACCGTATCAT     360

TGTTTCAACT TATCAAGCCG TTTCAGGTGC TGGTATGGGA GCAATTCTTG AGACACAACG     420

TGAACTTCGT GAAGTCTTGA ATGATGGTGT GAAACCACGT GATTTGCATG CGGAAATCTT     480

GCCTTCAGGT GGTGACAAGA AACATTATCC TATCGCCTTT AACGCTCTTC CACAAATTGA     540

TGTTTTCACT GATAATGATT ACACGTACGA AGAGATGAAG ATGACCAAGG AAACTAAGAA     600

AATTATGGAA GATGATAGCA TTGCAGTATC TGCAACATGT GTGCGTATTC CAGTCTTGTC     660

AGCTCACTCT GAGTCTGTTT ATATCGAAAC AAAAGAAGTG GCTCCAATCG AAGAAGTAAA     720

AGCAGCTATC GCAGCCTTCC CAGGTGCTGT TCTTGAAGAT GATGTAGCTC ATCAAATCTA     780

TCCTCAAGCT ATCAATGCAG TTGGTTCGCG TGATACCTTT GTTGGTCGTA TCCGTAAAGA     840

CTTGGATGCA GAAAAAGGAA TTCACATGTG GGTTGTTTCA GATAACCTTC TCAAAGGTGC     900

TGCTTGGAAC TCAGTTCAGA TTGCTGAAAC TCTTCATGAA CGTGGATTGG TTCGTCCAAC     960

AGCCGAATTG AAATTTGAAT TAAAATAGTC ATATCGTTTA GGAGTTCAGA TGAACTCCTT    1020

CTTTGAAATA GAGAGGTGTT TTCGTGTCTT ATCAAGATTT AAAAAAATGT AAAATCATTA    1080

CAGCCTTTAT TACCCCCTTC CATGAGGATG GTTCCATTAA CTTTGATGCT ATTCCAGCCT    1140

TGATTGAGCA TTTATTGGCC CATCATACGG ATGGAATTCT TCTCGCAGGA ACGACTGCTG    1200

AGAGTCCAAC TTTGACCCAC GATGAGGAGT TGGAGTTGTT TGCGGCTGTA CAAAAGGTTG    1260

TCAATGGACG CGTTCCTTTG ATTGCGGGTG TAGGTACTAA TGATACGCGT GACTCTATTG    1320

AGTTTGTCAA AGAAGTAGCG GAATTTGGTG GTTTCGCAGC TGGGCTTGCT ATTGTTCCTT    1380

ACTACAACAA ACCTTCTCAA GAAGGGATGT ATCAGCACTT TAAGACTATT GCAGATGCTT    1440

CTGACCTACC AATTATTATC TATAACATTC CAGGGCGTGT AGTTGTCGAA TTGACTCCAG    1500

AAACCATGCT TCGCTTGGCT GACCATCCAA ATATTATCGG TGTCAAAGAA TGTACTAGCT    1560

TGGCTAATAT GGCTTACTTG ATTGAGCACA AGCCTGAAGA GTTCTTGATT TATACAGGTG    1620

AGGATGGAGA TGCTTTCCAT GCCATGAACC TTGGGGCGGA TGGGGTTATT TCTGTTGCCT    1680
```

831

```
CTCATACAAA TGGGGATGAA ATGCACGAGA TGTTTACTGC GATTGCAGAA AGCGATATGA      1740

AGAAAGCCGC AGCAATTCAG CGTAAATTCA TTCCTAAGGT TAATGCTCTC TTCTCTTATC      1800

CAAGTCCTGC TCCAGTTAAG GCAATTCTTA ACTATATGGG ATTTGAAGCT GGACCCACTC      1860

GTCTACCTCT TGTTCCAGCA CCAGAAGAAG ATGCCAAACG CATTATCAAG GTTGTCGTAG      1920

ATGGCGACTA CGAAGCAACT AAGGCAACTG TAACAGGGGT CTTAAGACCA GATTACTAAT      1980

AAAGACAATA AAATCCGGCT CTTTGTCAAC TGTAGTGGGT TGAAGTCAGC TAAGCTCGAG      2040

AAAGGACAAA TTTTGTCCTT TCTTTTTTGA TATTCAGAGC GATAAAAATC CGTTTTTTGA      2100

AGTTTTCAAA GTTCCGAAAA CCAAAGGCAT TGCGCTTGAT AAGTTTGATG AGATTATTGG      2160

TCGCTTCCAA TTTGGCGTTT GAATAGGGTA GTTGAAGGGT GTTGACGATT TTCTTTTTGT      2220

CCTTTAGAAA GGTTTTAAAG ACAGTCTGAA AAATAGGATG AACCTGCTTC AGATTGTCCT      2280

CAATGAGTCC GAAAAATTTC TCCGGTTCCT TATTCTGAAA GTGAAACAGC AAGAGTTGAT      2340

AGAGCTGATA GTGATGTTTC AAGTTTTGTG AATAGCTCAA AAGCTTGTTT AAAATCTCTT      2400

TATTGGTTAA GTGCATACGA AAAGTAGGAC GATAAAATCG CTTATCACTC AGTTTACGGC      2460

TATCCTGTTG AATGAGTTTC CAGTAGCGCT TGATAGCCTT GTATTCGGGA TTTTCGATGA      2520

AACTGATTCA TGATTTGGAC ACGCACACGA CTCATAGCAC                           2560
```

(2) INFORMATION FOR SEQ ID NO: 115:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 11303 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

```
TATTGGATTT CCCTTGCAAT CAGTTTATGG GACAAGCACC CGGCAGCGCA GAGGAAATCA        60

ACGCCTTCTG TAGCCTACAT TTTCAAACCA CCTTCCCACG TTTTGCCAAG ATTAAGGTCA       120

ACGGTAAGGA AGCAGACCCT CTCTATGTCT GGTTACAAGA CCAGAAATCC GGCCCACTAG       180

GAAAACGAGT CGAATGGAAT TTCGCTAAGT TTCTCATCGG TCGAGATGGG CAAGTCTTTG       240

AACGCTTTTC TTCAAAAACA GACCCAAAAC AAATTGAAGA GGCGATACAA ACTCTACTAT       300

AATTCACAAT CTCACTATGA TTAGGTTTCC TTTAACCTGA TGAATAGTGA GATTTTTTGA       360

TGGGCTTTGA CTTAAATAGA AAAACACCCC ATGATATGAA ACATGAAGTG TTGTAAAGTC       420

TATGTTGTAG GTGCTTATTT CACAATTTCA ATGTGACCAG TGATAACGAA TACCATACAG       480
```

832

```
AATCTTCATA TACACTAAAC AAATGACTTT CTAATTATTT CAATTAGTTT TGGCTAGTAA        540

ATATCATTTC CAACAAACGC CCTCTCAATT CCTTATCCTG ATGATGCAAG ATATTCATTA        600

AGTCATGAGA GTTTTTCGCA TTGATGAATT GATTTAACAA TCTATCTTTT AATTCATATG        660

GAAGAGAAGC TGTCTTTAGT AGTCTAAAAA CTTCGTCATT TAAAGATGTC CTTTTATTAT        720

CTTTCCATTC AAATTTAGCT GTATCATTCT TATTTGGCAA TTCAATTATA GACACATTCG        780

TTCCTTTAAA ATGAATTCTA TGTTTTCTAT TGCTTGGAAC GATACTAGAA TCTCCTTGTA        840

ATGCTAACTC TACCATTCCC ATTTCCCAAT CGATTGATAA TCTTGTTTTA TATCTTTGAC        900

CATTTTGATC TTCAAGCATT TCAAAAGAAT GTTGTTTTCC TGGGAATACA TACCAATCTA        960

CAACTTCAGG TAAATCAACA CCCATACCTA TCTCAGAACC AACCAAGGGA ATGATTGCAC       1020

CACTTTTTGC AAACACAGGC GTAGTCGAGA TGTCCCTATA AACACTTAAC TTCACACCAC       1080

CTGTGTATTT TTTCTCTGAA AAGAAGTCAT ACCATTCACC TTCAGGGAAC CATACATCTA       1140

CTTTTGCAGA TTGGAATGTC AAATCCATCT TTTCTACAAT GGGAGCCACC ATCAGTTCTG       1200

TTCCAAAAAA GTATTGGTTT GGAACATTAT AGCTCTCATC ATTCTCTGGA TAGAAATAAT       1260

AGATTGGACT GATTAATGGG GCACCTTCCT CATGTGTCTG TACATTCATG GTATATAGAT       1320

AGGGAATCAT CTGATGTCTC AAACGAAGGT ATTTCTTCAT AATCTTAGAT GTTGTTTCTG       1380

AAAAAAACCA AGGTTCTTTA CTATTAAAAG GACTTCTAGA ACTATGTAAT CGAGTAATCG       1440

GACTAAAAAC ACCAAACTGT AGCCATCTAG TTTGTAGCTC TTCGTCATAA TCCCCCAACA       1500

TATGTCCACC GATATCATGA CTCCACCAAC TATAACCGAT ATTAGATGCT GTCGCTGTAA       1560

AATAGGGTTG AAATCTTAAG GAATTCCAAC TAATAATAGT ATCCCCTGAA AAACCAACAG       1620

GGTAGCGGTG ACTACCAGGA CCTGCATATC TTGATAAAAT CAAACCACCT TCTGCATTTT       1680

TACAACTATC CTGATAGTGA TAATGGTTTA AAAGCCAAAG TGGATCTAGC ATACCTTGTG       1740

TCCCTTGTTG CCAGTCAATC CACCAAAAAT CTACTCCCTG CTTTTCTAGT TCATAATGAA       1800

CATCTTTAAA GTAGGCTTCC CTAAAAGAGG GATTAAAAAA ATCAAAAATA GCAGGTTCTT       1860

CTAGTTCTAC ATTTAACCCC AACCGTTTTG CGATTTGAGG ATAAGCTTCT TCATAAGCCC       1920

GTATCCCATC AGCAGGATGG ACATTTAAGG AGAGTTTTAG CTTTCTATCA TGAAGTTGTT       1980

GCAATAACTG TTCTGGATTT GGTATTAAGT TTCTATTCCA ACTATATCCT GTCCAGCCAC       2040

TTCCAAAGCG AGCTGGAATG TCAGTTATAT GCCAATCCAT ATCTAACACA CCGATAGATA       2100

ATGGAATTTT CTCTGTTTCA AATCTGTCTA TTAAATCCAA GTATTCATCC GACGTATAAG       2160

GCCAATATCT ACTCCACCAA TTGCCTAAAG CATATCTTGG CAACAAGGGT GTTGAACCAG       2220

TCAAATGGTA AAAATCTCTG ATTGCTCCTC TATAATCATG CCCATAGGCA AAGAAATACA       2280
```

833

```
GGTCAATTTG ATTTTCTCTC TCAATATAAC CAGATTGTTC ATCCCAAATA AATCCTTGAG          2340

AATCATCCAA TAAGGCTATA CCATTTCGGC TAATAATTCC ATCTTCTAAC GAGATTGCTC          2400

CATCTGCCTT ATCCAGAGTC CGAGCTGTTC CTTTTAACGT TTCAATAGAT TCACCAAAAT          2460

ACCAGCGACT ACCATATACG GCAAAATTTC CTTTTAATTC TATAAATAAA TTTTCGGCGT          2520

TAAATTCTCC TTTATTAAAG TGCAGATGAA AATAGTCCGT CATAATATCT AGTACGTTTG          2580

ATGTCTCGAT ATAATCTAAC GAAATTTGGC CAAAATCTCT ATTATAGATA AGTTGTGTCG          2640

TTCTATCCTC AAAACTTCCA GTTTGAGAGT ATTCTAACCT TACTAGCTTG TCTGTTAATA          2700

CAGAGATTCG ATAAAACTCT CCCTTAAAAA TTTTCAATTT GTTTTCCTCC TTTTATGGTA          2760

GCATAAAAAC AGAACGCACC ATTTTTGATG CGTTTTTCAT TATTCTGAAT GCAATGTTCT          2820

ATCTGTTATA TCTATGACAA ATAATAGTCA ATTGAAAAAA TGCAGTGGAC AAAATATCTT          2880

TTAACAAACC AAGAGTTTAT TAAAGAGTTA TCACTTTTCA ACTTTTCTAA GCTTATGCAG          2940

TTGTGAAACA AACTACTTTT AAACTATTAA CTAAGATAGG ATTGATAAAT AATTTCAAAC          3000

TCTTACTAGC AATCATACGA TATTCAAGCT CACGTGCTTT TTTCCTTCCT GCTTATTTCT          3060

TAGAACTGAA GAACCCGGAT CGGTATATAA ATTATCCGGA TCAACATAGT CATAAGATTC          3120

ATAACAGTTG CGCTTCATTA AGTCATCCCC AGAGCAAGAG CTTCATCTCG TAATTTTTCA          3180

ACATCACTAA CCGTAGGTCG CCATCCTTCA ATCATATTTG TACTTAAAGC ATACCAAACA          3240

CTCTTAAAAA CGGATCGGTT TTCAAAAGCT ATTCCCATGA TTGTCATCTT TTCTTTATCT          3300

ATATCTAAGG ACATATGCTA CCTCCTTTAG ATACATTATA CCATGTTTCT CTGTAGCTTT          3360

TAAAAATTTT ATTTTGTTTG TCATATCTAA GTTTTCAGCA CGCTTATCCT ATTTTATAAG          3420

CCTCAAACCC AAATATAAAA CGCATTCTTT TTGCTTTTTT ACTATTGTAT CGTATTCTAC          3480

GATAACATAC TTTACTTTAT TGTTTTTTTA AATAACAGCA GTTCCCTGTT TATCAACTAT          3540

TCGAACTACT TTCTATTTTG CTTCATACCC TACATAGCGA AAAAATATGA AAAAGCAGAG          3600

AAGAATATCT TAAAAAGACC TCTTCACTGC TAATATTAAC ACTCATTATT TAAACTATAT          3660

GGATTCTATC ATCGAGTATA CTTTTTTTACT TATTAGATAC CTTGCTCTTC TTTCACCAAT          3720

TTTTGATCAT ATACACGGAT GAATGGAAGA TAGACTAGGA ATGCTGCAAA TGCACATACT          3780

AGAGCAACTA ATACAGCTCG AAGATCTGCT GTCCCTAAGA AAGCTCCAAT CCCTACTGGA          3840

GTTGGCCATG GAACCTGTGC GATAATTGGC TTAATAAAGT TTAGAGAATT CGCTACGTAA          3900

TAAATAGTAG CAGTAACCAT TGGTGCTAAA ATAAATGGTA TAGCCAAGGC TGGATTATAG          3960

ATAATAGGTA ATCCAAAAAT TAATGGTTCA TTAATATTAA ATAAGGCTGG AACTACAGAT          4020
```

834

```
GCTCGTCCTA TTGCTTTAAG CTGTTCAGAT TTAGAGGCAA AAGCAATATA TAAACATAGT        4080

CCTAAAGTTG CACCAGAACC ACCTGCAATT ACAAACATAT TAGAAAATTC ACCTGCAACA        4140

GCGAAGTGCC CGCCAGCAGC ATTTTCAGCC ATGTTAGCAA GAGCAATTGG ACTAACAAAT        4200

GCAAAAACAA TGTTCGCACC GTGGATACCT ACAATCCAAA GTAGTTGAGT CAATAGATAA        4260

ATAATCATTA AACCAATCCA CGAATTAGTC AGATTGGATA CAAAACCAAA TGGAATTGCA        4320

ATGACTTTAA AAATATCTGT TCCCATTGCT ACAAGAAGAC CGTTGATAAA GATAACAACA        4380

AATGCAACAA CAAATCCCGG AACCAAAGCG GTAAATCCAC GAGAAACTCC TTCTGGAACA        4440

GCTTCAGGCA TTTTAATAAC CCAATTATGT TTAACACACA TACGATAAAT AAGAACAGTC        4500

ACAATTGCCA TAATGATTGC GGTAAAAATC CCTGTTGTCC CAAAACGTGC GACTACATTT        4560

CCCATTGCCC ATCCATCTGC AATTACTGCA CCTTCTTTTA GACTTGTCAC AGTCTTCATC        4620

ATTCCACCAT CAAAAATGAT TTGCGGTACT GTCATGACAA AAGCCATCAA GGCAAGCAAG        4680

GCACCATTAA GAGGATTCAT ATTGAGTTCT TCTTCCTCTG CATAAATTTT TGTCAATTCA        4740

TATGCAAGTG ATAGAACGAA ATAAAGAGAT AGAGAACCCA TAGTCGCATA GTTTGCAACC        4800

ATGTAAAGTG ATGTGAATTT ATCAAATGAA GCAGAGAAAA TATCTGCCAC AATTGGCCAA        4860

AATGAGAAAG CTTGTGGCAA AATACTGAAT ACCAAAAACA TTGATCCTAC AATAGTAAAT        4920

GGTACAGCAG CCATACCTGC AGCCGTGATA GCACGTACTA CTTTAAACTG AGCAAGTTTG        4980

CCCATTGGTC CCATAACATG GTTTTCAAGA AAACCAAACA ACCCGTTTTG TTGATCCATA        5040

AATAGACCTC CTTAATAAAA CATAATAATT TTTACTTTCT AAAGACTAGT TTCAAATACA        5100

AATTATACTA GATCAGGATT ATAAACTAAG TGAGTTCTTT TCCAATTGGA CAAATTGTTG        5160

ATAAGCCTTA TCTGTTCGTT TATAAATTTT TTTAATTCTT CTAATGTCTA ACAAACTCAG        5220

AACTAAACCT AATAGAAGAA CTACAAAAAC AAATAAACGT GCTACTTGGT TATTTTCAAA        5280

AATCGGAAAA AGATTCTTAA ACCAACTTGT CCAAGTTAAA ACAAGTAATC CTATTGAAAT        5340

AAGCATTTGT ATTCTAACAA ACATTAGTGT TATTCCCAAC TTTTCTTTCC TATTTCCATA        5400

AAGTTTAAAT TGTTCAACAG TTGCTAAAAT AGAAAATACT ATGAGCATAA TGGGGAAAAT        5460

AATAATAGGC GAGGGACTAA TAAACTGACT CAAAAGCCAA TAAATATTCC CAAAAAAGAA        5520

GAGTGCTATT GAATAACGTA GAAGAAGATA TCGATTGAAA AAAGTATTAG TTAGAGCCAT        5580

CTCTCGACGT TGTTGTTCAA TCTTTTGTCG TTCTTTTTTA TCCATATCAT TTCCTCCTTA        5640

TATAACAACA CATATTTAGT TAACTTTCTT ATAAAGAGCT AACATTTCCT TTGCTACTTC        5700

TAATAATGTC ATAGTGGTCA TTAAATGATC TTGAGCATGT ACCATGATAA TTTCAATTTT        5760

AATTTCCACT CCACTTGCGT ATTCTTGCAA GAGTTTGGTT TGTGCATGAT GCGCTTCAAG        5820
```

835

```
AATTATCTCA TTTGATTGAT TTAATTTACT TTCTGCATCA TCAAAACTAC CTTCTCTCAT    5880

TTTTGCAAAT GCTTCATGTA TTTCTGACCT TGCATTTCCC GAATGCAGGA TAATTTCAAA    5940

TGCTGCAACC TGCAGTTCCT CTTGATTCAT ATAAACCTCC TATTTTATCT TCTCAAATAT    6000

GTTAATAAAA TCTTCAAAGT TATTGCAAGA TATTAGCTGA TTTTGCAATT CATCATTCTC    6060

TGTCAGAGAG ACTATCTTTT TAGTCACAGT TGCCAAACCT TCGTTCCCAT ATATTGATGG    6120

AGATAGAAGA AATACTAGCT GGACATGTGA ACTTTGATTA TCCCAGAGTA ACGAATCTTT    6180

ACAAATTGCA ACCGAAACCT TTCCCTCTGT ACCAAAGGGC TGAATAGGAT GCGGAACTGC    6240

AATTTTTTCA GAAAAAACAA CTGAACTTAA TTCTTCGCGC TGTTTAATTC CATAAAGTAA    6300

AGATTGTTCA AACTCATTTG ATTCACCAAC AGATAAACTC TCAACCATCT TTTCAAGTAA    6360

ATTTACCTTG TCTGATTCAG TACATATTAA AAAGTTTTCT TTACTAAAAT ACTGTCTAAA    6420

GCCGTTGTTT TCAAATTTGT TAATCTTTGA TGATTGTACA TAACTAGAAA CTTGCATCTA    6480

ATCCATAGCT TTTCTAATCA TTTCCATCTC ATCACTCTTA AGAAACACAC TAACTTTAAA    6540

AACTGGGATT TGAAAATATA GATTTGATAA ATCAATAGCT GACACTATAA AATCTATTCC    6600

TTTAAGTTTT TCTTGATTCA ATTCATAGTA GCCTATTACA TCAACAACTT CTACTCGCTT    6660

CCCAAACTCC GTTTCCAAAC GATTTCTTAA CATTTGGGCT GCACCAAATC CTGTTGCACA    6720

AATAGCAAGA ATATTAAACT TAGTACTCTC TTTGCTACGT TCCATAGCAG CTAAAAAGTG    6780

AAGACTTACA TATGCTACTT CATCATCTGA TATTGTCCAC TCCAAGAACT TGTCCATATT    6840

TGCAAGAATT TCTCTAGTCA TAAAGAATAT ATCACTATAA TTCTGTTTAA TTTCATCTAC    6900

CAAAGGGTTA TTTAAGGTAA TCCGGCTTTC TAAACGTACT TGTAGTGTCA TTAGATGAGT    6960

TATCAATCCT TCAATTAGTT GGAAATCTGA AGAAAAGTTA TACATATCAT CTAATCCTAA    7020

ATTCTGAAAT GTTTTAAATA AAGATTTTTT TAAAACTTCT TCAGAAATAT TCTTCTGATT    7080

TTTTTGACAT TGTTGACTCT TAGCTAACAA ATGCAAAGTA ATGTAGTCTA TTTCCTGAAC    7140

TGGAAATTCC TGATTTGTTA CTTCTCTTAC TTTAGAAAGA ATTCTTTGGG CAACCTTTCT    7200

CTCTATTGCA TCATCAGTCA TCTGACAGTC TATATTTTTT ATTTCAAATC CGGATTTTAA    7260

ACGAATCACA GACAATGCTA TGTGAACTAC TAAATTCTGT AGTACAAAAT CAGATAGTTT    7320

TAGGTTGGCC TCTTGGCATT CATCCAAAAC AATTCTAGCA AATTCTTCTA ATGGAACAGT    7380

TTGATCAAAA AAGTTAAATT TTACATAGCA ATGTATTGTT TTAAAAAATT GATTCTCTAG    7440

GAAATAATTT ATGATAAAAC GTCGTTTATC ACGTTCCTCG CCTGAGACAT AAACTCCTTT    7500

ATTCGCCCTA CTCTCAATGG ACAAATTATA CTCTGATAAC ATCACTCGTA TCTTTCTGAA    7560
```

836

```
ATCATGAGAT AATGTTGAAC GACTAACGTA AAGTTCATCA GCTAAATCAT CAAAAAGAAC   7620

TGGAACTTGC TCAAATAATA ATTTATTTAA GATAAATACT AAACGATCAT CACCTTTTGA   7680

AACCGCAGTT TTCGTATAGT CTTCTTCCAG TTCATAAGTT TGTCTAAACT CCTGGTAAGC   7740

GCCTTGATTC TCAAAAAATA TTTGATACCC TTGACCTTGT TTTGAAATCA ACCGGACTCC   7800

TTGAATAATC ATTGTCTTCT CAATTAATTT CAGTACATTA CGGACAGTTC TATCTGAACA   7860

GGATAAATAT TCTGCCAGTT CTTTGCTTGT AACAAAACGT TCCTTATTTT TTATTAAAAA   7920

TTGAAGGATA TCTTTCTCTT TAATGTTTAA CACATTCATT CCCTCCTAAA ACGTATGTTT   7980

TCATATATTG AAGCATATTA TACACTTAAA TCAGTTTATA TCAAACTCAA AACAATTTAT   8040

CTTAACCTAA ATATTTATTG ACATTTCATG TGTTCATCAA ATATTCTCAA GAATCAAATT   8100

AGCCATTTTT TCAATTCCCA TTGGAATAGG AATATAGGCT TGAGGAGGTA TTTGTACAAC   8160

TGGTTTTCCT GCTTTAGAAC CAGCCTCTTC AAATTGCTTA AAGTACATTT TTGTTTGAGG   8220

ACTGACAAGA TACAAATCAA AAGCTGCTGC TGCGATAGCT TTCCCTCCTT CAGTAGCACT   8280

AATAGCATCA ACTACAATAT CTTTCCCTTT TCCTTTTAGA AACTCTGTTG TTTTCTGTGC   8340

CATAAGTGAT GAAGACATTC CTGCTGCACA AATAATTAAA GCTTTTGCCA TAATATTTTC   8400

TCCTTTTCTT AAATCCAATC AAAGCTGTGC TAAGTTGGCT TATTTGTTAT CTATTTTTAT   8460

TATAAAATAA AGCGTTTCCA ATGACAATTC CCTCATTTTC CTAAATGATA TGGAAAAAAA   8520

TTATTTATAC TTCAATTTAT AAAATAAAAT TATTCCTGAG AGTAGAAATG AAACACTATT   8580

TGCTAAAATC AAAGGCAAGT CTCCTATACG AATACCATGA GCAAGCCACA ATGCAATACC   8640

AATAACTTGC ATAACATACA TACCTAGAGC AATAGATCCT GTGTCCTTTG TCTTAACTAC   8700

ACGAAAAACT TGTGGTAAAA ATGCAAATGT TGTTAAAATT GCTGCAATAC TTCCAATCAT   8760

ATGTCACCTC AATATGCTAA ACAAACTGAG AATAATCTCA GTTTGTTTAT ACTATTCTAC   8820

TGATTCACCG TTAGATGAAA TAACTTCCTT ATACCAGCCA AAAGATTTTT TCGGGGAACG   8880

ATTATAACTT CCCTTCCCAT TATCATCTTT ATCTACATAA ATAAAGCCAT AACGTTTCCG   8940

CATTTCACCG GTACCAGCTG AAACCAAATC AATACATCCC CATGGAGTAT AACCCATTAA   9000

ATCAACACCA TCTTCAACTA CAGCCTTTTT CATTTCACGA ATATGGGCAC CTAGATATTC   9060

AATTCTATAA TCATCATGTA CCATACCATC TGCTGCAACT TGATCTATAG CTCCAAAACC   9120

ATTTTCAACA ATAAAGAGTG GTAAGTGATA GTGGTCTGTA AACCAATTTA ACGCATAACG   9180

CAAACCTTCT GGATCAATTT GCCACTCCCA TTCGAAGCC TTAACATAAT TATTTTTCAC   9240

TAAATCTTCT GTTTCAAGAT AATCAAAATA AGGATTATTT TCACGATGAG AGTCGATAGC   9300

AAAGGACATA TAGTAACTGA AACCAATGTA ATCTACAGTC CCACCAAGTA AATCTTCTTT   9360
```

837

```
ATCCTGGGCA GTAAAATCAA CTGAAATACC TTTTCGTTCC CAATACTTGA AAATATGCTC     9420

AGGATATTTA CCTAAAACAT GCACATCAGC AAAATAATAA CGCTTCTGCA TAGCTTTCAT     9480

TGCCATTAAG ATATCCTTAG GATTGCAAGT AACTGGATAA ATTGGACACA TCGCAATCAT     9540

ACAACCTATT TGAAAATCTG GATTAATCTC ATGACCAATT TTTACAGCTC GTGCAGAAGC     9600

AACTAATTCG TAATGTGCTG CTTGATACAT AATTGCTTCT CTATTATCAC CTTCCTCATA     9660

TACAATACCT GAGTTAGTAA ATGGTGCAAA ATCTTCCTGA TAATTCGCTT GATTATTGAT     9720

TTCATTGAAA GTCATCCAAT ATTTAACCTT ATCTTTGTAA CGTTTAAATA CGACTTCTGC     9780

AAAACGAGCA AAGAAATCAA TCAATTTCCT ATTTTTCCAA CCACCATATT CGGTCACTAA     9840

GTGATAAGGC ATTTCAAAAT GAGATAGAGT GATGACAGGT TCAATACCAT TCTTTAAGCA     9900

TTCATCAAAA AGATTATCAT AAAACTGTAA TCCTTCTTCA TTCGGCTCTA ACTCATCACC     9960

TTTTGGAAAG ATACGTGTCC ATGCAATAGA GGTACGGAAG CACTTGAATC CCATTTCAGC    10020

AAAAAGTGCT ATATCTTCTT TATAACGGTG ATAAAAATCT ATCGCCTCAT GATTTGGATA    10080

ATATTTACCC TCTAAAACTC CCAAAGTAAT TTCACGAGCT ACTCCATGAC GACCAGCAGT    10140

CATAACATCA GCAACACTAA TTCCCTTGCC ACCTTCTTGC CATCCACCTT CAAGTTGATG    10200

AGCAGCAACA GCACCACCCC ATAAAAATCC ATCTTTAAAA GTAGTCATCT TTTTTCCTCC    10260

TGACTTTGAT ACTCTTATTA TAAACCTTAA ACCAAAAGAT GAAAACGCAT TCTTTTTCCT    10320

TATTGTTAAG GAAAGAAGTA ATTTTTAATG GAAATAGAAC AATATCTTCT TGTATTCTCG    10380

TAATGATATC TTTACGATTT TCAATACTTT CAAACTACAA AAACTCTCAC AATAATTCTA    10440

ATTCCCTGTG TCTATAAACG ACTTATCGCT TTCTGGCATC CCAGAATCAT CTTCTATATA    10500

ACGTTCAACT TGCATCTGCA AGTGATATTT TTTTCTTAAA TCTAAGATTT TCTGCATTGT    10560

CTTTGATTGA TAATGTTTAT CTAAAGTTTC TTGATTTATC CACTGATCAA TAAGGAGAAT    10620

AGTTCCCTCT TTTTCAATTG GTAAAAAATA TTCGTATTTC AAGTTACCTT TTTGATTTCT    10680

AATTTCTTTA ACAAGGCCAC TATCAAGCAT TTCTCTTGCA AACTTTATTG CACTATCTCC    10740

ATCACCTTTA TAATATACAT GAATAGTCAA TGTCATCTTA TATCCTCCAA AATCATCCTT    10800

CAATTTTAAA AAAACAAGTT TAGATGAGGA TCTAAACTTG TTTTTTATGA ACTAATTATC    10860

TAACGTTTCG CCATTACTTT CAATCACTTC TTTATACCAA TAAAATGATT TTTTCTTATA    10920

GCGATTTATA GTCAATTGAA ACAAGAGCAG GACAAAAGAG CCTCATAAAA GGTATTGCAA    10980

CTTGGTAATA CCTTTTTGAG GTGCTTTTTG ATATGAGCCC ATGTTTTCTC AATAGGATTG    11040

TACTCAGGTG AGTAGGGAGG AAGAGGTAAA AGTTTATACC CAAACTCTTC ACACAAGAGT    11100
```

838

```
TCTAGCTTCC CCATTCTATG GAATCTTGCA TTATCCATAA TAATAACCGA TGGTGTGGTT     11160

AATGTTGGTA AGAGAAACTT CTGAAACCAA GCTTCAAAAA AGTCGCTCGT CATCGTCTCT     11220

TCGTAAGTCA TTGGAGCGAT TAACTCACCA TTTGTTAGAC CTGCAACCAA AGAAATCCTC     11280

TGATATCTTC TTCCAGATAC TTT                                            11303
```

(2) INFORMATION FOR SEQ ID NO: 116:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 3112 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

```
CCTTAGATTT CCACTTGCCA GAGGAATTGA TTGCCCAAAC GCCCCTTGAA AAACGTGATG       60

CCTCCAAACT CCTCATCGTC AACCGTGAGA CAGGAGAAAT GCAAGATAAA CATTTCCACT      120

CTATTATTGA TATGCTGGAA CCTGGTGATG CCCTTGTCAT GAACGACACC CGAGTTCTCC      180

CTGCCCGCCT CTATGGTCAA AAAGTGGAGA CAGGAGGTCA TGTGGAACTT CTCCTCCTTA      240

AGAACACTAG TGGAGACGAG TGGGAAGTTC TGGCTAAACC TGCCAAACGC CTCAAGGTCG      300

GTACTCGTAT CAGCTTTGGT GATGGCCGCC TCAGCGCTGT CGTTACAGAA GAATTGACCC      360

ACGGGGGACG CATTGTCCGC TTTGAATACC AAGGAATTTT CCTAGAAGTC TTGGAAAGTC      420

TGGGAGAAAT GCCTCTGCCA CCTTATATCC ACGAAAAATT AGATGACCGT GAACGTTATC      480

AAACCGTCTA CGCCAAGGAA AGTGGCTCTG CTGCAGCACC GACTGCTGGT CTTCACTTCA      540

CCAAAGAACT GCTGGCAGAA ATCCAAGCTA AGGGTGTTCA TCTAGTCTAT CTGACTCTCC      600

ATGTCGGACT CGGAACCTTT AGACCTGTTT CTGTGGATAA TCTGGACGAA CACGAAATGC      660

ACTCAGAGTT CTATCAACTT TCTGAGGAAG CTGCTGCCAC CCTTCGCTCT GTCAAAAAAA      720

ATGGTGGTCG TGTCATCGCT GTCGGAACCA CTTCTATCCG CACCTTGGAA ACTATTGGTT      780

CCAAGTTTGA TGGGCAAATC CAAGCAGATT CTGGTTGGAC CAATATCTTT ATCAAACCTG      840

GGTATGAGTG GAAGGTCGTG GATGCCTTCT CAACCAACTT CCACCTGCCA AAATCAACTC      900

TGGTCATGTT GGTTTCTGCC TTTGCAGGCC GTGAATTAGT CTTAGATGCC TACCACCATT      960

CCATCCAAGA ACACTACCGC TTCTTCAGTT TTGGTGACGC CATGTTTATT TATTGAGAAA     1020

GAATTTCTCT AAATCTTCTA ATACCAATAA ATCGCTAAGA TATTATTTCA AAGAACATCT     1080

ACAATTGAAA CTCTAGCTAG CTGTAGAAGA GGCCTAGTAC ATTGAAATTA AAATGCTTCC     1140

CCCTAGCTTC GAAAATATTG CCATAGATTG CGTTGACTCT CCAAATTGAT TCATCTATAT     1200
```

839

```
TTTATTTCAG CTTCCTATAC TTTCTTCGCT GTTTGTAAAT CAAAATGCAA GACACATGAG    1260

TAGCACCATA TTTGTTACTC TTATCTGTCC TCTCAAGAGA CTATTATGAG TTATTTCAGA    1320

ATCATTCACT ACTTTGACCC TGACTCTCCT TAGTCTCAAA ATCAAAGACT TATACTCTTC    1380

AAAAATCTCT TCAAACCGCG TCAACGTCAC CTTGGATTAT ATATGTGatC TGaCTTCGTC    1440

AGTTCTATCT ACAACCTCAA AGCAGTACTT TGAGCAACCT GCGACTAGTT TTCTAGTTTG    1500

CTCTTTGATT TTCATTGAGT ATTAAACAAA AAGTGAACAA ATCTGAATTC TAATGTACAG    1560

AAGACTAGGC TTGTTCACTT TTTTATAGTC GCTATAAGAT GACCTTATCT ATAGCTTTTT    1620

ATATATAATT ATATATTCAG ACATACTATT ATCAATTTTG TCGCAGGGAG GAATCTGTTA    1680

ACGCACCCAT TCACCATTAT CATTGACTCT ATAGCCATCT ATACTTGTAT TGACCGCTAA    1740

CTCACCCGAT GTATTTACAT AATACCATTT ACCACCAACT TGGAACCATT GATTGACTTT    1800

CATAGAACCG TTGCTGTTGA GGTAGTACCA TGAACTATTA ACTTGTACCC AACCTGTTGC    1860

CATGGAACCA TCAGTATTAT AAAAATACCA CATACCATTT TCTTGTTTCC AGTCTGTTGT    1920

TGGAGCAACT GCTTTAGCTG GTTCTACTGC TACATCTGTT CCTTGGTTAG ATGTAACAGA    1980

TACAGGATAC GAAGGAATAG ATGATTGCTC AGGAACAACA ACTTTTTCAG GTTCTCTCGT    2040

CCCTCTCCTT ATACGTCTTT TTACCATCTC TTTAGTAATT TGACGAGAAG TAGTTTCTTC    2100

AATTGTTCCA TCACGTTCAT CTACAGTATA GATTGTAGTA AGAGTAATTT ACCAATTTCT    2160

CCTACTTCTT CTACTTCTTG ACTTTTATCA AGAGTTGGGC CATCGAGATA TTCTGTTTCG    2220

ATTGGAATTT CTTGGACAAG AACTTGGGGC TTGGTTCTTT TTTTAACAAC TCTTGTTTGA    2280

GAGTCTTTTT TTTGACTTAA AGTACTCTCA GTTACTTGTC CACTCTTTCC ATCTACATTA    2340

TAAGTTATCG TTGTAACTGT TTTCCCATTC TTTCCTAGAG TAATCTCTTG CTCCTGTCCT    2400

GCAGAAAGGT CATTGTCTGC TTCATATTTA GTAGCAAATG GAACAAGAAC TTCTTCAACC    2460

TTGCTTTTAG CTGGAACTTT GATAACTGTA TCCGTGGCTT CTTTTCTATC AACAGTAACC    2520

TGTTCGGTAA CATAACCAGT CTCTGGATTA ACATCGTAGG TCCTTGTCGT AGTTACATAG    2580

CCATCCTCTC CATCAATTGT AACAGGATTT TCACTACGGT CTTTTGTTTC ATCTTTTTCA    2640

TAACGAATTC GCGTACTTGA AATTTTCTTG GTTACTACCT TAGGTTTAGT CGCTACTTTT    2700

ACAATAATAT CCCCATTGTC AGCGTCATCA TACTCTATTC CCTCTTCTTT ATCTCTAGTA    2760

TCATCTCTGA CATATTGAAT CCCATCAGCA GCATGAACAA AACTTGTATT CAGATTCCTC    2820

CTAAAAATAA AGTTAGCCCG ATTACCGCAG AACCAAAAAT CTTTCCGAGT TTACGTATTG    2880

CATAGCGCTT ATTAGTATTA GATTTTGCCA TTACATCCTA CTTCTAGTAT AGCATCTTTT    2940
```

840

CTATCAAACG TTAAACAATA TACGTTATAT ATAAAATAGA CTTAGAATGA TATATTGATT   3000

ATTGAACTAA CACTTTAACT ATATCGTAAT CAATCTCATA TATAAAGGAT TGCAGACATC   3060

TTATCTAAAT ACATGCGAAT ATATTTAGAT ACAAACATTC CAACTTGATA AT   3112

(2) INFORMATION FOR SEQ ID NO: 117:

    (i) SEQUENCE CHARACTERISTICS:
        (A) LENGTH: 4327 base pairs
        (B) TYPE: nucleic acid
        (C) STRANDEDNESS: double
        (D) TOPOLOGY: linear

    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

CCCAAAAATC TCTTCAAACC ACGTCAGCTT CGCCTTGCCG TAGTATGGTT ACTGACTTCG   60

TCAGTTCTAT CCACAACCTC AAAACAGTGT TTTGAGCATC ATGCgGCTAG CTTCTTAGTT   120

TGCTCTTTGA TTTTCATTGA GTATAAAAAC AGATGAGTTT CTGTTTTCTT TTTATGGACT   180

ATAAATGTTC AGCTGAAACT ACTTTCAAGG ACATTATTAT ATAAAAGAAT TTTTTGAAAC   240

TAAAATCTAC TATATTACAC TATATTGAAA GCGTTTTAAA AATGAGGTAT AATAAATTTA   300

CTAACGCTTA TAAAAAGTGA TAGAATCTAT TTTTATGTAT ATTTAAAGAT AGATTGCTGT   360

AAAAATAGTA GTAGCTATGC GAAATAACAG ATAGAGAGAA GGGATTGAAG CTTAGAAAAG   420

GGGAATAATA TGATATTTAA GGCATTCAAG ACAAAAAAGC AGAGAAAAAG ACAAGTTGAA   480

CTACTTTTGA CAGTTTTTTT CGACAGTTTT CTGATTGATT TATTTCTTCA CTTATTTGGG   540

ATTGTCCCCT TTAAGCTGGA TAAGATTCTG ATTGTGAGCT TGATTATATT TCCCATTATT   600

TCTACAAGTA TTTATGCTTA TGAAAAGCTA TTTGAAAAAG TGTTCGATAA GGATTGAGCA   660

GGAAGTATGG TGTAAATAGC ATAGGCTGAT GTCCATCATT TGCTTATAAA GAGATATTTT   720

AGTTTAATTG CAGCGGTGTC CTGGTAGATA AACTAGATTG GCAGGAGTCT GATTGGAGAA   780

AGGAGAGGGG AAAATTGGCA CCAATTTGAG ATAGTTTGTT TAGTTCATTT TTGTCATTTA   840

AATGAACTGT AGTAAAAGAA AGTTAATAAA AGACAAACTA AGTGCATTTT CTGGAGTAAA   900

TGTCTTATTT CAGAAATCGG GATATAGATA TAGAGAGGAT CAGTATGAAT CGGAGTGTTC   960

AAGAACGTAA GTGTCGTTAT AGCATTAGGA AACTATCGGT AGGAGCGGTT TCTATGATTG   1020

TAGGAGCAGT GGTATTTGGA ACGTCTCCTG TTTTAGCTCA AGAAGGGGCA AGTGAGCAAC   1080

CTCTGGCAAA TGAAACTCAA CTTTCGGGGG AGAGCTCAAC CCTAACTGAT ACAGAAAAGA   1140

GCCAGCCTTC TTCAGAGACT GAACTTTCTG GCAATAAGCA AGAACAAGAA AGGAAAGATA   1200

AGCAAGAAGA AAAAAATTCCA AGAGATTACT ATGCACGAGA TTTGGAAAAT GTCGAAACAG   1260

841

```
TGATAGAAAA AGAAGATGTT GAAACCAATG CTTCAAATGG TCAGAGAGTT GATTTATCAA    1320

GTGAACTAGA TAAACTAAAG AAACTTGAAA ACGCAACAGT TCACATGGAG TTTAAGCCAG    1380

ATGCCAAGGC CCCAGCATTC TATAATCTCT TTTCTGTGTC AAGTGCTACT AAAAAAGATG    1440

AGTACTTCAC TATGGCAGTT TACAATAATA CTGCTACTCT AGAGGGGCGT GGTTCGGATG    1500

GGAAACAGTT TTACAATAAT TACAACGATG CACCCTTAAA AGTTAAACCA GGTCAGTGGA    1560

ATTCTGTGAC TTTCACAGTT GAAAAACCGA CAGCAGAACT ACCTAAAGGC CGAGTGCGCC    1620

TCTACGTAAA CGGGGTATTA TCTCGAACAA GTCTGAGATC TGGCAATTTC ATTAAAGATA    1680

TGCCAGATGT AACGCATGTG CAAATCGGAG CAACCAAGCG TGCCAACAAT ACGGTTTGGG    1740

GGTCAAATCT ACAGATTCGG AATCTCACTG TGTATAATCG TGCTTTAACA CCAGAAGAGG    1800

TACAAAAACG TAGTCAACTT TTTAAACGCT CAGATTTAGA AAAAAAACTA CCTGAAGGAG    1860

CGGCTTTAAC AGAGAAAACG GACATATTCG AAAGCGGGCG TAACGGTAAC CCAAATAAAG    1920

ATGGAATCAA GAGTTATCGT ATTCCAGCAC TTCTCAAGAC AGATAAAGGA ACTTTGATCG    1980

CAGGTGCAGA TGAACGCCGT CTCCATTCGA GTGACTGGGG TGATATCGGT ATGGTCATCA    2040

GACGTAGTGA AGATAATGGT AAAACTTGGG GTGACCGAGT AACCATTACC AACTTACGTG    2100

ACAATCCAAA AGCTTCTGAC CCATCGATCG GTTCACCAGT GAATATCGAT ATGGTGTTGG    2160

TTCAAGATCC TGAAACCAAA CGAATCTTTT CTATCTATGA CATGTTCCCA GAAGGGAAGG    2220

CAATCTTTGG AATGTCTTCA CAAAAAGAAG AAGCCTACAA AAAAATCGAT GGAAAAACCT    2280

ATCAAATCCT CTACCGTGAA GGAGAAAAGG GAGCTTATAC CATTCGAGAA AATGGTACTG    2340

TCTATACACC AGATGGTAAG GCGACAGACT ATCGCGTTGT TGTAGATCCT GTTAAACCAG    2400

CCTATAGCGA CAAGGGTGAT CTATACAAGG GTGACCAATT ACTAGGAAAT ATCTACTTCA    2460

CAACAAACAA AACTTCTCCA TTTAGAATTG CCAAGGATAG CTATCTATGG ATGTCCTACA    2520

GTGATGACGA CGGGAAGACA TGGTCAGCTC CTCAAGATAT TACTCCGATG GTCAAAGCCG    2580

ATTGGATGAA ATTCTTGGGT GTAGGTCCTG GAACAGGAAT TGTACTTCGG AATGGGCCTC    2640

ACAAGGGACG GATTTTGATA CCGGTTTATA CGACTAATAA TGTATCTCAC TTAGATGGCT    2700

CGCAATCTTC TCGTGTCATC TATTCAGATG ATCATGGAAA AACTTGGCAT GCTGGAGAAG    2760

CGGTCAACGA TAACCGTCAG GTAGACGGTC AAAAGATCCA CTCTTCTACG ATGAACAATA    2820

GACGTGCGCA AAATACAGAA TCAACGGTGG TACAACTAAA CAATGGAGAT GTTAAACTCT    2880

TTATGCGTGG TTTGACTGGA GATCTTCAGG TTGCTACAAG TAAAGACGGA GGAGTGACTT    2940

GGGAGAAGGA TATCAAACGT TATCCACAGG TTAAAGATGT CTATGTTCAA ATGTCTGCTA    3000
```

842

```
TCCATACGAT GCACGAAGGA AAAGAATACA TCATCCTCAG TAATGCAGGT GGACCGAAAC          3060

GTGAAAATGG GATGGTCCAC TTGGCACGTG TCGAAGAAAA TGGTGAGTTG ACTTGGCTCA          3120

AACACAATCC AATTCAAAAA GGAGAGTTTG CCTATAATTC GCTCCAAGAA TTAGGAAATG          3180

GGGAGTATGG CATCTTGTAT GAACATACTG AAAAAGGACA AAATGCCTAT ACCCTATCAT          3240

TTAGAAAATT TAATTGGGAA TTTTTGAGCA AAAATCTGAT TTCTCCTACC GAAGCGAACT          3300

AGAGAGATGG GCAAAGGAGA GATGGGCAAA GGAGTTATTG GCTTGGAGTT CGACTCAGAA          3360

GTATTGGTCA ACAAGGCTCC AACCCTTCAA TTGGCAAATG GTAAAACAGC GACTTTCCTA          3420

ACCCAGTATG ATAGCAAGAC CTTGTTGTTT GCAGTAGATA AGGAAGATAT CGGACAGGAA          3480

ATTATTGGTA TAGCTAAAGG AAGCATCGAA AGTATGCATA ATCTTCCTGT AAATCTAGCA          3540

GGTGCCAGAG TTCCTGGCGG AGTAAATGGT AGCAAAGCAG CGGTGCATGA AGTTCCAGAA          3600

TTTACAGGGG GAGTTAATGG TACAGAGCCA GCTGTTCATG AAATCGCAGA GTATAAGGGA          3660

TCTGATTCGC TTGTAACTCT TACTACAAAA AAAGATTATA CTTACAAAGC TCCTCTTGCT          3720

CAGCAGGCAC TTCCTGAAAC AGGAAACAAG GAGAGTGACC TCCTAGCTTC ACTAGGACTA          3780

ACAGCTTTCT TCCTTGGTCT GTTTACGCTA GGGAAAAAGA GAGAACAATA AGAGAAGAAT          3840

TCTAAACATT TGATTTTGTA AAAATGGCTC TTTGTCAACT GTAGTGGGTT GAAGTCAGCT          3900

AAGCTCGAGA AAGGACAAAT TTTGTCCTTT CTTTTTTGAT ATTCAGAGCG ATAAAAATCC          3960

GTTTTTTGAA GTTTTCAAAG TTCCGAAAAC CAAAGGCATT GCGCTTGATA AGTTTGATGA          4020

GATTATTGGT CGCTTCCAAT TTGGCGTTAG AATAGTGTAG TTGAAGGGCG TTGACGATTT          4080

TCTCTTTGTC CTTTAGAAAG GTTTTAAAGA CAGTCTGAAA AAGAGGATGA ACCTGCTTTA          4140

GATTGTCCTC AATGAGTCCG AAAAATTTCT CCGGTTCCTT ATTCTGAAAG TGAAACAGCA          4200

AGAGTTGATA GAGCTGATAG TGATGTTTCA AGTCTTGTGA ATAGCTCAAA AGCTTGTTTA          4260

AAATCTCTTT ATTGGTTAAA TGCATACGAA AAGTAGGGCG ATAAAAATGT TTATCGCTGA          4320

GTTTACG                                                                    4327
```

(2) INFORMATION FOR SEQ ID NO: 118:

        (i) SEQUENCE CHARACTERISTICS:
            (A) LENGTH: 3521 base pairs
            (B) TYPE: nucleic acid
            (C) STRANDEDNESS: double
            (D) TOPOLOGY: linear

        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

```
CTCTGGCCCT GCCACTCCAA CGTTTTGTCA GGGTGCTTTT TTCATAAAGG AGTTCTTATG           60
```

843

TTAGATATCA AACGTATTCG TACAGATTTT GAAGCTGTCG CAGAAAAATT AGCTACACGT   120

GGTGTAGATG CTGCTGTCTT GAATGAAATG AAAGAAATCG ATGCTAAACG TCGTAACATC   180

TTGGTCAAGG TTGAAACTCT CAAAGCAGAA CGTAACACAG TTTCTGCTGA GATTGCCCAA   240

GCTAAGCGCA ACAAGGAAAA TACAGATGAC AAGATTGCTG CCATGCAAAA TCTATCTGCT   300

GAGGTTAAAG CCTTGGATGC TGAATTGGCA GAAATCGATG CTAAATTGAC AGAATTTACA   360

ACGACTCTTC CAAATATCCC AGCTGACAGC GTTCCTGTTG GGGCTGACGA AGACGACAAT   420

GTGGAAGTTC GCCGTTGGGG TACTCCACGC GAGTTTGACT TCGAACCTAA AGCTCACTGG   480

GATCTCGGTG AAGACCTTGG TATCCTTGAC TGGGAACGCG GTGGTAAGGT AACAGGCGCT   540

CGCTTCCTCT TCTATAAAGG CCTCGGTGCT CGTTTGGAAC GTGCTATCTA CAACTTTATG   600

TTGGATGAAC ATGGAAAAGA AGGCTATACT GAAGTCATCA CACCTTACAT AGTCAACCAT   660

GATTCTATGT TTGGTACTGG TCAGTATCCA AAATTTAAGG AAGATACTTT TGAACTCAGC   720

GATACCAACT TTGTCTTGAT TCCAACTGCT GAAGTTCCTC TGACAAACTA CTACCGTGAT   780

GAAATCTTAG ACGGCAAAGA TCTTCCAATC TACTTCACTG CCATGAGTCC GTCATTCCGT   840

TCTGAGGCTG GTTCTGCCGG TCGTGATACG CGTGGCTTGA TCCGTTTGCA CCAATTCCAC   900

AAGGTTGAAA TGGTCAAATT TGCCAAACCA GAAGAATCTT ACGAAGAATT GGAAAAAATG   960

ACAGCCAACG CTGAAAACAT TCTTCAAAAA CTCAACCTTC CATACCGTGT CGTTGCTCTC   1020

TCTACTGGAG ATATGGGCTT CTCAGCTGCG AAGACTTACG ACTTGGAAGT GTGGATTCCA   1080

GCACAAAACA ATTACCGTGA AATCTCAAGC TGTTCAAACA CAGAAGATTT CCAAGCCCGT   1140

CGTGCCCAAA TCCGTTACCG TGATGAAGCA GATGGCAAGG TGAAACTCCT TCATACCTTG   1200

AACGGTTCTG GACTTGCAGT TGGACGTACA GTGGCTGCAA TTCTTGAAAA TTACCAAAAT   1260

GAAGATGGTT CTGTGACCAT CCCAGAAGCA CTTCGTCCAT ACATGGGTGG AGCTGAAGTC   1320

ATCAAACCAT AAAAAAATAAG GTTTAGCTAT TTCTAGCTAG ACCTTTTTTC GTAACCAAAT   1380

CAGATAAGCA CCTAGTACAA AGAATAAAAT AGTTAGGCAT ATAATGGTTT CAGCCAATAC   1440

CAGGTAATCC AGAAATGGAA GTTTCAAAAT TCCCTGAGCC ATCTTGAGCG AGGTCGCTGT   1500

GATAATGGTT GGGAAGGTGA GGGCTGAGAA GGCTGGTTGA AAACCTTGTT TTAAAATGTT   1560

GGGCAGACGA GTTAAAACAA AGAAAAAGAA GGATTGAGAA GCCAAAATCA TGACAATCAA   1620

GACCCAAGTC GGCAGGCTGG TTCCTCCTAC TCGAACTAGA GAAGCCAAGA GTAGAGAGAA   1680

AGGAGCACAG TAGATTCCTT CTTGTCCAAG CAAGGCTAGT GGGAGTGGAT GTTTCTTTAA   1740

ATCGCTATAA ATAAGGGGAT AGAGATAGAA GGTCAAGAGA AAACCAAAAC TCAAGGTCGC   1800

844

```
ATAGGCAATT TCGATAATAC CTACCAGAGG ATAGGTCAAG GCAGCCACTG CTATCCCCAC    1860

ATAGAGAACC GTCCAGCTTG GAGTGGCATG AACCCTCCGC CCTGGACAAG CAAACTTGAT    1920

GGTAAAACCA GCAATCAAGG TCAAATCCAA GAGAAATGAA AACCACCAAA TCCCTTGTGC    1980

TACCAAAGGA AGATAAGAGA ATACGCGAAA GACATAGGTC GATAAAATCA TCCCAGCCAT    2040

AGGAAAGGTT GCCATTCCTG ACAAAAGAGG GGGCTTGGTC AATTCTTGCT TGGTTTCTTT    2100

CCAATTAAAG AGATGCAGAA TTAGAAAGTA AATCCATAAA ACCAAACCAA TCAGACTAAA    2160

AAGATGGGAT AGAACCGGCA ACGTATCTAA AATAAGATTT CCAGCTCCTG CCAAACCTAG    2220

CAAACAACCT GAAAATACTA AGGGGAGTTT TTTCATCCTA ACCTCCAATA ATCATGTTAG    2280

TTTCAGTATA ACATAAAAGC GCTTAAATGA GGATTTAAAA AAACGAGTCC GCTTATTTCA    2340

GACTTCATTT TACTCAGATA TGAATTAGGC ATAAGGTTGC AATTCTGGAT TAATTGGTGT    2400

ATTAGCTAAG TTGTTGGCAT AGTTACAGAG GATTGCTAGG CTGACACCAA AAACCACATC    2460

CAAGGCATTT TGTTGAGTGT AGCCAGCTTC TAAAAACTCA GACAAGGCTT CATCTCCTAC    2520

ACGACCCTTG GTATTGATAA CTGCCAAGGT AAACTTAGCT AGGGTATCCA ATTTAGGATC    2580

TGTTTCAATT GGAGTACGAT TGCGAAGAGC TTGAATCAAG TCATCATTCA TCTGGATTTG    2640

TTTGATGGAA AAGGCTGTGT GACCTGCGAC ACAGAAGGCA CAACCATTGG TCACGGCTGC    2700

CGTGATTTGC ACCACTTCAC GCTCAACGGG TGTCAGGCTG TTGCGACGGT GGATAGATGA    2760

GACAATTTGG TAGGCTTCTA AAACAGTCGG GGCATTGGCC AAGAGACCGA TTAGGTTGGG    2820

AATATAGCCA TTGTTGTCTT TTTCTACTGT TTCAAGAATT TCTTTCACTT CTGCTGGTGC    2880

TGACTCTACT GTATGGATAG TAAATGTTGT CATAAGATAC CTCTTTTCTT ATTATTGACA    2940

CTAATATTAT TGGAAAATCT TATAAAATCC TGATTCCTAA GTTTATCTAA GATAAAGCTT    3000

TATTCTCTCA TAAGATTTTC GTTGTTATAT TAGTTTATCA CACTTCCAAT CACTTGTATA    3060

ATATATATTA TATATCAGGC TGATAAAAAT TATTTATAGG CAAAAAAATC ACACGAGCTG    .3120

TGTGATTCCA TTATTTGTCA AAATACTTTT TAGTTTCAGC AATAACGACT GGCGACAAGA    3180

CCAAGAGGGC AATCAAGTTT GGCAGAGCCA TCAAGGCGTT AACGATATCT GCGATAATCC    3240

AGACCATATC CAACTCGATA AATCCTCCTA ACAAGACCAT GAGCACAAAA ACCACACGGT    3300

AGAGCCAGAT AAAGCGAACC CCAAAGAGGA ACTCAAAACA GCGTTCTCCG TAATAGTTCC    3360

AACCTAGAAT CGTTGTAAAG GCAAAAAGTA CAAGGAAGAT GGTCAAGAGA GCAGGCCCAA    3420

AGTGTGAAAA GTTTGTTGAG AAAGCTGACT GAGTCAAGGC AACCCCATTC AAGTCACCGC    3480

TCCAAACTCC AGTTACCAAG ATGGTCAAAC CAGTTAGAGT A                        3521
```

(2) INFORMATION FOR SEQ ID NO: 119:

845

(i) SEQUENCE CHARACTERISTICS:
    (A) LENGTH: 1968 base pairs
    (B) TYPE: nucleic acid
    (C) STRANDEDNESS: double
    (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

```
AACCTGGGCA AGCAAGCTAA AAGCAATGGG ACCTGGAATC CTAATGGCAA CTGCCGCTGT        60

TGGAGGTTCC CACATTGTAT CCTCAACTCA AGCTGGCGGT TCTTACGGTT GGTCTCTACT       120

TCTCTTGGTC ATCTTAGCCA ATGTCTTTAA ATATCCATTT TTCCGTTTTG GTGCTGAATA       180

CACAGCTGAT ACTGGAAAGA CTTTGGTTGA AGGTTATGCC GAAAAAGGAA AACTCTATCT       240

CTGGATTTTC TTTATCCTCA ATGTCTTTTC GGCTATGGTC AACACGGCTG GTGTTGCCAT       300

TCTGTGCTCA GCTATCATCG CCAGTGCCTT CCCAATGATT GGACTTAGCA TTACTCAGTG       360

GTCCCTCATT CTCGTTGCAA TCATTTGGGC TATGCTACTC TTTGGAGGCT ACAAACTTTT       420

AGACGGCATG GTCAAATGGA TTATGTCTGC CTTAACCATT GCGACTGTTC TTGCAGTTAT       480

CATTGCGGCG GTCAAGCATC CAGAATACAG TTCTGATTTT GTCGAGAAGA CACCTTGGCA       540

AATGGCAGCT CTGCCCTTCA TCGTCTCCCT CCTAGGATGG ATGCCGGCTC CTATTGAAAT       600

TTCAGCCATC AATTCACTTT GGTCAGCTGA AAAGAGAAAG ACCGTCAACT TTAACACAGA       660

AGACGCTCTG TTTGACTTTA ACACTGGTTA TATTGGAACA GCTATCCTAG CCGTCTTCTT       720

TGTGGCACTG GGAGCACTGA TTCAGTATCC TACAGGGCAG GCGGTTGAAG CTGCTTCAGC       780

CAAATACATC TCTCAATTCG TGGGCATGTA TGCCTCTGTT CTTGGCGAAT GGTCCCGTTA       840

CTTGATTACC TTTATTGCCT TCCTCTGTAT CTTTGGAACA GTTATAACTG TTATCGATGG       900

CTATTCTCGC GTTAATCAGG AATCTCTCCG ACTGCTAATC AGTCAAAAAG AGGACAATCG       960

TAAATCTTTG AACATCTGGA TGACCATCAC TGCTATCATC GGTATCGTCA TTATCAAGTT      1020

CTTCGCTGGT CAGGTTTCAA CCATGCTCCG CTTTGCCATG ATTGGCTCTT TCCTGACAAC      1080

ACCTTTCTTT GCTCTTTTGA ATTACGCCTT GGTAACGCGT GAAAACAAAA ATCTTCCTTC      1140

TTGGCTCAAA CACCTTGCCA TTGCGGGATT GATTTTCCTC TTTGCTTCGC CATCTTCTTT      1200

ATCTACGCAC TCGCAATCGG AAAAGCAGGG TAAGGGACAA GCGCGAGATG AAGATAAGGT      1260

TTCATTTCAA GAGAAAATTC AGCAAATATT TCTATGATAA AAAGCATAAG AACAAGGTTT      1320

TGAAGACCTG AACTTATGCT TTTTTACGTT CTTAAAGACT GTTTATACTC AAAAAACAGT      1380

TGAACAACTT CAACCACCTC TTATAAGAAC TTTATACTAT TCGAGAATCT CTTCAAACCA      1440
```

846

CGTCAGCTCT ATCTGCAACC TCAAAGCTGT GCTTTGAGCA ACCTGCGACT AGCTTCCTAG   1500

TTTGCTCTTT GATTTTCATT GAGTATTAAT TCTCCTTTTC CAACTCATAC AAATCTGCGA   1560

TAATAGCTGC GACATGTTTG ATATCTTCCA GCATGCCTCG CATTTCAAAG TCAGCCAATA   1620

CAGGGAAGCC AAAGCGTTGA CTGTATTGCT TGGCTGTTAG GCAGTATTGG TTATTAAAGT   1680

TACGATTTCC TGACCCAACC ACACCAAAAC ACTTACTAGC ATTGTTACCA TAGGCAATAA   1740

AATCTCCCAC CGGTGTCGTC AAAATCTCAA CATCTCCGTT ATCCACGCCA TTCCCACCTT   1800

CGAGATAGGT CGGCAAAAAA GCGACATAGG GATGGTCCAT TTCATAGAAA TTTTTGCCTT   1860

CCTTGACCAA ATCCTTGATA TGAATCTTTT GAACCTCAAT CCCTTTGTAC TGGGACAAGA   1920

GATAGTCTTT CAAGCGCGTC ACAAAACTTT CAGTGTTGCC ACTCAAGG   1968

(2) INFORMATION FOR SEQ ID NO: 120:

      (i) SEQUENCE CHARACTERISTICS:
          (A) LENGTH: 7172 base pairs
          (B) TYPE: nucleic acid
          (C) STRANDEDNESS: double
          (D) TOPOLOGY: linear

      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

CCGCATTTTT TATCACTAGA CTCGAGACAT CTTTTGAGTG GCTCTTGCTC TCTGGTTTAA   60

TTTTCTTCCT TGCTCAAGGA CTCCTGCTAT TTCTCTTGGT CGTCCGACTC AAACATCAAT   120

TCGCTGAGAT TTATCCTCAA ATCAATAAAA AGATTCGCTT CTACTATTTA GGGGTTCTCA   180

CCATTGATTT TCTATTTTTT GTTCTCTTAG CCTTCATTAG TTCTCAGCGT TTTTCATCTC   240

TTATGCCAAT CATCACTGCT TGCCATTCTA CTTTTTATTA TATGACAGCT GACTACCTAA   300

GAGAAAACTA TCCAGACTTT TACGACAAAC ACATCTCTTT ATGGGAGTGT CTCTAAAGAA   360

AAGGAGGTTT TAGCATGAAA AAAATCATCT TCATCAAAAC CATTCAACTC CTTGTCATTG   420

ATGGAATCAT GCTGGCATTT TTGACATTTA AAAGGGGGCT TACTTGGGAC TGGATTTTGA   480

TTTATAGCGG TTGGCTCATT TTCTTTCATC CTGTGCTATT GACCTATCTT TCAAACCAAC   540

TTTGTGACCA CTTTAGTTAA CTCTATTCCC AGATTAGACC GAGATTCTGG CGTTTTGCTT   600

TACAAATTCT CCTATGGGAT AGCCTGATGA TTCTCTCCTT GGTGTCTTTA AGTGATATTC   660

CACTTTTCCT TCAGGGAACT CTCCTCATCC TAGGACATCT CATCCCTTCC TATCGCATCT   720

GCCAAAGCCT GAAAAGAGAC TTCCCCCAAG CATATCAAGA ACCGATTTCT TTTTGGAGTA   780

TTTTATGATA GATGAGAAAG ACCAAGCCGA CTGGGCTTGG TCTTTCTTAT CTCTTTTTAG   840

TATCTAGGAT AATGGTAACA GGTCCATTAT TAACCAGCTC AACCTGCATA TCTGCTCCAA   900

847

```
AGATGCCTGT CTGAACGGGC ACTTCTTGCG CTAATTTTTG ATTGAAAGCA TCATAGAAGT    .960

CTGATGCCAT ATCAGGTTTA GCTGCCCCTG TAAAGgCTGG ACGATTGCCT CTCTTAGTAT    1020

CCGCAAAGAG GGTAAACTGA GAAATAGAGA GGATTTCTCC TTCAATATCT TTGACAGACA    1080

GGTTCATCTT GCCTTCTGCG TCTGAAAAAA TCCGCATATT GACCAGTTTT CTCACAGCAT    1140

AGTCCAAATC TTCCTCTTGG TCCTCTGGTC CAACACCAAC CAGCAATAAA AGTCCCTGAT    1200

TGATTTTTCC CTGAATCTGG CCTTCTATAC TCACTTGGGC TTTTTTAACC CGTTGGATAA    1260

TGATTTTCAT AATAGCCTTT CTAGTAAGAG CTAGGACAAC TAGCCGTTGG TCCGTTTGAC    1320

AGAGTAAACT TCTGGCACAC TCTTAATTTT ATCGACAACC GTGGTCAGTG TAGAGAGGTT    1380

GGCAATACCG AAGgACACAT GGATATTAGC AAACTTCATA TCCTTGGTTG GTTGGGCATT    1440

GACCGTTGAA ATATTCTTGG TTGTATTTGA AAGAACTTGC AGTACATCGT TCAACAGTCC    1500

TGTACGGTTG AGACCGTAGA TATCGATATG GGCCATATAC TCCTTATTTG AGCTAGGGTA    1560

CTGGTCTTCC CATTCCACAT CAAGGAGACG TTGCTCGTAG TTTTCTTGGG CACGCAGGTT    1620

CATACAGTCC ACACGGTGAA TAGCCACACC ACGACCCTTG GTAATGTAGC CAACAATATC    1680

GTCACCAGGC ACGGGGTTAC AACACTTAGC AATCCGCACT AGGAGACCAG AAGCACCTTC    1740

AATAACCACT CCCCCCTCAT GCTTGACCTT GAGGGTTTCT TTATTTTCAA CCTTGACCTC    1800

GCCACCTTTG ACAAGCTCCT CTGCCTCAGC TTTGGCCTTG GCACGCTCTT CCTCACGGCG    1860

TTCCTTTTCA GTCAGACGGT TAAAGACGGT AATCGCACCG ATTTCCCCAA AACCAATGGC    1920

CGCAAAGAGG GAGTCTTCTG TCTTGTAACT GGTCTTTTGC AGAACTTGAT CCATGTGGCG    1980

CTTGTCCATA AATTTATTTG CCACATAGCC ATTTTCTTGG AACTGAGCCA TCAGCATCTC    2040

ACGACCCTTG TTGACAGACA ATTCCTTATC TTGGTTTTTA AAGAACTGGC GAATCTTATT    2100

GCGCGCCTTG CTAGTCTTGA CCATATTGAG CCAGTCACGG CTAGGTCCAA AGGAGTTCGG    2160

GTTGGCGATA ATTTCAACCT GATCCCCTGT CTTTAACTTG GTTGTCAGTG GAACCATGCG    2220

GCCATTGACC TTGGCACCAG TTGCTTTTTC ACCGACCTTG GTATGGATTT CGTAGGCAAA    2280

ATCAATCGGT CCTGAATCTT TGGGAAGGGA ACGGACAGCT CCATCTGGGG TAAAAACGTA    2340

AATCTCCTCA GCCAAATAGT TTTCCTTAAC AGAGTCCACA AATTCCTTAG CATCATCAGC    2400

CTGGTCTTGG AGCTCCATCA TCTCCTTGAT CCAGTTCATT CCAATAGCTG ATTCCTTGCT    2460

GTTAACTTGC CCCTTTATAC CTTTCTTATA AGCCCAGTGA GCCGCAACCC CGTACTCAGC    2520

CACCTCGTGC ATTTCCTTGG TTCGAATCTG GAATTCAATC GGCCCTTTTG GTCCATAAAC    2580

AGTCGTATGG ATAGACTGAT AACCATTGGC CTTGCGGTTG GCGATATAGT CTTTGAAGCG    2640
```

848

```
ACCTGGCATC GGTTTCCAAA ATTCATGCAC GTAACCAAGC ATGGCATAAA CATCACTTTG     2700

GGTATCTAAA ATACAACGAA TAGCAATCAG ATCATAGATT TCCTCAAACC GTTTTCTCTT     2760

GTCCTGCATT TTGCGGAAAA TTGAGTAAAT ATGCTTGGGA CGACCATAAA TCTTCCCTTT     2820

CAAGTGACGT TCTGTCGTAT ACTCCTCTAA TTTTGTGACT ACCTCATCCA CCAAGGCCTC     2880

ACGCTCCCTG CGCTTTTCCT TCATCATATG GGTAATCTTG TAAAACTCCG TTGGATTGAG     2940

ATAACGGAAA GACAAGTCTT CTAATTCCCA TTTGACACTG GAAATCCCCA AACGATGGGC     3000

AAGCGGGGCA TAGATTTCCA TGGTTTCTTT GGAAATACGC TCCTGCTTGT CTTTTCGAAG     3060

ATGTTTCAGG GTCCGCATAT TGTGCAAGCG GTCAGACAGT TTGACCAAAA TAACGCGGAT     3120

GTCCTCGAC ATGGCCATGA GCATCTTGCG ATGATTTTCC GCTAATTGCT CCTCGATCGA      3180

TTTGTACTCG ACCTTGCCAA GCTTGGTAAC TCCGTCAACA ATCATCCGCA CATCAGGACC     3240

AAACTCTCTT TCCAAATCGT CCAAAGTCGC ATCTGTATCT TCCACCACAT CATGCAAGAA     3300

TCCACAAGCT ACTGTTACAG CATCCAGCTT TAGCTTAGCT AAAATACCTG CCACTTGGAT     3360

AGGGTGAATG ATATAAGGCT CGCCTGATTT GCGATATTGA CCACTGTGGC ATTCAACAGC     3420

ATAGACCAAG GCCTTATGGA CAAAATGAAC ATCCTCTTCC GTTAAATATT CTTTGGTTAA     3480

AGCGACAACT TCTTCGCCTG TTAAATTCAC TTCTTTCGGC ATCTCTACTC TCCAATTCTT     3540

CCTACCATTT TATCACTTTT TTAAGAATAT GAAAACTAGA TTGGAACAGA ATAAGAAAAA     3600

AATAATTCAA AATTGCTTGA TAATTCTGAA TTATTGGTCC GTAATATACT ACGAAGTTAG     3660

ATTTTAAACT TAGGTGATAG AAGGAGAGAT AGAAGAACGG AAACCATATT GTAACCCAAA     3720

GACTTTCTGA CTTCCCCAAT TCCATTGAAG ATACGAAAGA TAAACGGTGG AACTCGTATC     3780

ACATACACTG GTACCTTGAC TGGATTTTGG AATTAATACT AAATGAAAAT CAAAGAGCAA     3840

ACTAGGAAAC TAGCCGCAGG TTACTCAAAG CACCGCTTTG AGGTTGCAGA TAAAGTTGAC     3900

GCGGTTTGAA GAGATTTTTG AAGAGTATAA AAATCCTCAA GATACTTTCT TCTATCCTTT     3960

AGTTTATAAG GAGAATACCT ATGAAAAAAA CTGCTATTTC TATCTTTGCT CTCCTAATGT     4020

TAGGAGTTTG CTGCCTGTTC CTATTCAGCC AGCAAAGCTA TAAAAAACAG TCGTTCAATA     4080

CTATGCTAAC GACCAGAACC TGCCCAGTAG GATAACTTAT AGTGAATATA GCGACAAATG     4140

AGAAGCCAAC TACGGTAGCA CTCTAAACAT CACGTCTATC AAACAAGCTA ATGACGGAGT     4200

TTATGCAACC TATGAAGGGC AATTGACACC TTTCCAATAT TGATAAATTG ATAACCAGCC     4260

TGTCTTCATC TAGTCATGCT GGTTTTTAAG TTCATTTTAA ATCCTTACCT ATTCTCCCTA     4320

ACTGTGCTAT ACTTAATTTA TACTCAATGA AAATCAAAGA GCAAACTAGA AAGCTAGCCG     4380

CAGGCTGTTC AAAGCACTGC TTTGAGGTTG CAGATAAAGT TGACGCGGTT TGAAGAGATT     4440
```